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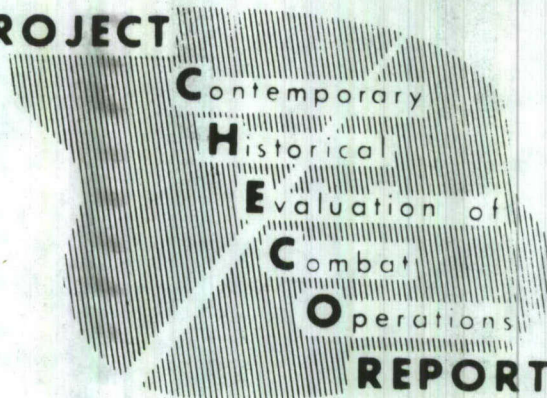
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# SEVENTH AIR FORCE TACTICAL AIR CONTROL CENTER OPERATIONS

15 OCTOBER 1968

HQ PACAF

Directorate, Tactical Evaluation  
CHECO Division

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Prepared by:

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WARREN H. PETERSON, Colonel, USAF  
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FOREWORD

"Seventh Air Force Tactical Air Control Center Operations" fulfills three major purposes: it highlights 7AF tactical air operations in Southeast Asia (SEA) from 1 November 1967 through 31 May 1968; explains how air strikes in South Vietnam were being coordinated with all friendly forces; and describes the organization and functions of the 7AF Tactical Air Control Center (TACC), as they were on 15 July 1968.<sup>1/</sup>

This report also enlarges upon important changes in the 7AF Tactical Air Control System and other systems--discussing their genesis and evolution--their elements and staff agencies.<sup>2/</sup> Primarily, however, this study focuses on the Tactical Air Control Center in its primary role of allocation, direction, and control of in-country airstrikes and air defense in Southeast Asia.

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## CHAPTER I

### HIGHLIGHTS OF 7AF OPERATIONS: NOV 1967-MAY 1968

This chapter presents the highlights of Seventh Air Force operations by discussing the essence of selected individual operations and concluding with a monthly statistical resume of 7AF activity as measured by sorties flown and other relevant factors. The following examples of individual operations illustrate the application of tactical airpower in SVN during the reporting period.

#### Dak To

Action of the United States in the battle for Dak To took place during 3-23 November 1967, in the Central Highlands of Kontum Province, a location of dense jungle growing over rugged terrain. Leading to this assault, a B-52 ARC LIGHT strike on a suspected enemy storage and supply area resulted in a large secondary explosion on 1 November. This confirmed other suspicions that North Vietnamese (NVN) forces were converging on Dak To. Suspected of being a part of long-range enemy strategy, the battle for Dak To resulted in heavy casualties for U.S. troops, which assaulted three separate areas of heavily bunkered hilltops. Friendly casualty statistics unquestionably would have been higher without the numerous airstrikes delivered by tactical air forces during the campaign. A lesson learned from this battle was that napalm could be delivered effectively and accurately on enemy forces within 30 meters of friendly troops which were not well dug in. <sup>1/</sup>

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### Viet Cong in III Corps

Also in late 1967, several friendly fortified outposts in northern III Corps Tactical Zone (CTZ) were subjected to desperate attacks by the VC. These assaults were repelled and heavy enemy casualties were inflicted by the local SVN forces supported by tactical airpower. U.S. Air Force units provided immediate close air support, including flares and heavy aerial firepower, to fortified camps in danger of being overrun by the enemy. <sup>2/</sup>

### Operation NIAGARA

In late 1967 and early 1968, intelligence sources had reported a growing concentration of enemy forces in the western demilitarized zone (DMZ), which suggested the probability of an imminent large-scale enemy offensive in northwestern I Corps Tactical Zone (CTZ) and adjacent Laotian areas. The estimated objectives of the anticipated offensive were to take Khe Sanh, and other allied positions blocking infiltration routes around the DMZ into SVN, which were otherwise readily accessible to NVN forces. The expected offensive, it was believed, would begin about 30 January, when SVN would be "standing down" for the Lunar New Year. Accordingly, on 22 January, at the direction of the Commander, United States Military Assistance Command, Vietnam (COMUSMACV), the 7AF Commander launched Operation NIAGARA, the most massive and sustained air campaign yet seen in SVN. Its objective was to disrupt the anticipated enemy offensive. When it officially ended on 31 March, the enemy had failed to attain his objectives. More than 24,000 tactical strike sorties and 2,500 B-52 sorties had been flown. However, the need for centralized operational control of tactical airpower manifested itself during Operation NIAGARA. This

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precipitated the directive designating the Deputy Commander, United States Military Assistance Command, Vietnam, for Air Operations (DEPCOMUSMACV for Air), who was also the 7AF Commander, as Single Manager for strike and reconnaissance tactical air resources throughout SVN and the extended battle area.<sup>3/</sup>

#### TET Offensive

The enemy began his sweeping TET Offensive without lifting his heavy pressure against allied positions in the NIAGARA area, striking Saigon, Hue, and 34 of 45 provincial capitals, as well as many friendly military installations.<sup>4/</sup> The heavy fighting throughout SVN began at the end of January and continued through February. Air forces played a major and somewhat new role in the cities. Tactical airpower, allied with ground troops and artillery, killed enemy forces by the hundreds at the outskirts of, and sometimes deep into the cities. Captured documents gave testimony that "so many aircraft overhead" had a psychologically deleterious effect on the enemy, causing him to question the probability of his ultimate success.<sup>5/</sup>

#### Operation DELAWARE

Operation DELAWARE was a good example of the employment of tactical air, B-52 strikes, aerial reconnaissance, and airlift in support of army ground forces. This operation involved the air assault of the 1st Cavalry Division and the 101st Airborne Division in the A Shau Valley and Route 547, from 19 April through 17 May 1968. It reflected a change in U.S. ground forces tactics which emerged during 1968; i.e., the abandonment of fortified camps and the employment of highly mobile, hit-and-run assaults. It was an interdiction effort more concerned with the destruction of enemy supplies than

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troops. During the operation, aircraft of the 7AF, Strategic Air Command (SAC), U.S. Navy (USN), and the U.S. Marine Corps (USMC) were used. The changing weather dramatically illustrated the importance of tactical airpower as well as limited all-weather operational capability. When the weather was good, the operation progressed; when it was bad, the campaign lagged. Air forces flew a total of 2,966 strike sorties producing 267 secondary explosions, 38 secondary fires, 83 enemy killed by air, 13 road cuts, 13 trucks destroyed and five damaged, 24 gun positions destroyed, 408 bunkers destroyed and 49 damaged, two tracked vehicles destroyed, and one bridge destroyed. Four friendly fixed-wing aircraft and 20 helicopters were lost. However, it was determined after this operation that "the only completely effective interdiction program" for the A Shau Valley was to occupy it with ground forces. Although airpower had been able significantly to inhibit the flow of supplies, it had not been able to curtail it sufficiently to prevent the adequate supply of enemy needs in northern I CTZ.<sup>6/</sup>

#### KHAM DUC

The evacuation of the Special Forces Camp at Kham Duc on 12 May earned accolades for the effectiveness of centrally managed tactical airpower in SVN. Problems were admittedly encountered in the areas of interagency coordination and communications control. However, ground commanders credited the 122 USAF and 16 USMC sorties with preventing enemy occupation of the site during the critical evacuation process. Used in this operation were fighter aircraft, C-130s, C-123s, O-2s, CH-46s, CH-47s, and UH-1Hs, followed by B-52 strikes. At great cost to the enemy, the application of this broad spectrum of tactical

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airpower resulted in the unusually successful evacuation of some 1,400 personnel from the besieged camp.<sup>7/</sup>

These operations and many others illustrate the type of tactical air activity in which RVNAF/US/FWMAF air forces were involved.

#### Monthly Operational Summaries

Provided next are highlights of Seventh Air Force operations in brief monthly accounts of sortie activity, munitions expenditures, casualties, aircraft losses, and resistance encountered from MIGs and SAMs. Although TACC was mainly concerned with in-country operations, this account also discusses out-country operations.

November 1967

A total of 81,465 sorties of all kinds were flown by USAF aircraft (63,606 in SVN, 7,983 in Laos, 6,940 in NVN, and 2,936 in Thailand). The munitions tonnage expended (33,490) was almost equal for in- and out-country operations. There were 7 USAF personnel killed in action (KIA), 30 wounded in action (WIA), and 29 listed as missing in action (MIA).

The USAF lost 43 aircraft, 39 of which were attributable to combat with the remainder classified as operational losses. The majority of combat losses--26--occurred in action over NVN. Combat losses in SVN and Laos were 9 and 4 aircraft, respectively.

Three F-105s and one F-4 were shot down by MIG-21s in the vicinity of Yen Bay. All of the MIGs used similar tactics, each attacking from the rear with

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a single hit-and-run firing pass. On 6 November, east of Kep Airfield, a MIG CAP flight of F-4Ds shot down two MIG-17s.<sup>8/</sup>

#### December 1967

The 82,916 sorties flown in December exceeded the November total by 1,451. Of the December total, 65,430 sorties were flown in SVN, 8,846 in Laos, 6,042 in NVN, and 2,598 in Thailand. A total of 33,008 tons of munitions were expended (15,813 in-country and 17,195 out-country). Ten Air Force personnel were KIA, 22 listed as MIA, and 21 WIA. Four crew members, previously reported missing, were listed as captured.

Twenty-six of the 30 aircraft losses were due to combat. Ten of the combat losses occurred in NVN, 8 in Laos, and 8 in SVN. During 1967, the USAF lost 424 aircraft, 333 of them in combat. Most of the losses from hostile action were in NVN. Of the combat losses, 55.3 percent occurred in NVN; 30 percent in SVN; 14.1 percent in Laos; and 0.6 percent in Thailand. At the end of 1967, the USAF had lost a total of 1,095 aircraft since 1 January 1962, 842 of them due to hostile action.

MIG engagements increased from 39 in November to 69 in December. USAF pilots shot down three MIG-17s, and MIGs shot down three USAF aircraft (two F-4Ds and one F-105). Of the 69 engagements, USN aircraft participated in six of them and downed one MIG-17.<sup>9/</sup>

#### January 1968

During January, 68,343 sorties were flown in SVN, 10,162 in Laos, 6,640 in NVN, and 2,568 in Thailand--a total of 87,713. There were 35,470 tons of

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munitions expended, 16,425 in-country and 19,045 out-country. Fifteen personnel were KIA, 85 were WIA, and 19 were listed as MIA.

The USAF lost 41 aircraft, 36 in combat. Nineteen of the combat losses occurred in SVN, 16 in NVN, and 1 in Laos. USAF aircraft had 36 MIG engagements and USN aircraft had two, a substantial decrease from the record high of 69 engagements in December. MIGs shot down three F-105s and one EB-66, while USAF pilots downed three MIG-17s and one MIG-21.<sup>10/</sup>

#### February

There were 64,443 sorties flown in SVN, 9,720 in Laos, 4,723 in NVN, and 2,509 in Thailand: a total of 81,395. Munitions expenditures totaled 30,649 tons, more than 21,000 of which were expended in SVN. There were 38 USAF personnel KIA, 199 WIA, and 14 reported MIA. The February total of 251 battle casualties was the highest during the period.

All 45 aircraft losses were combat losses, and 32 of these occurred in SVN. Of the 32 losses in SVN, 25 were lost on the ground from mortar and rocket attacks. Of the remaining losses, 8 occurred in NVN, and 5 in Laos. USAF aircraft had 20 MIG engagements and USN aircraft had 1. MIG pilots shot down 1 F-102, 1 F-105, and 1 F-4D. USAF pilots shot down 3 MIG-21s and 2 MIG-17s. This was the first and only month during the period that the number of MIGs shot down was higher than the number of USAF losses to MIGs.<sup>11/</sup>

#### March

Of the 92,225 sorties flown in March, 73,297 were in SVN, 10,477 were in Laos, 5,828 were in NVN, and 2,623 were in Thailand, resulting in a munitions



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expenditure of almost 35,000 tons. More than 23,000 tons of these munitions were used in SVN. There were 16 Air Force personnel KIA, 33 WIA, and 26 reported as MIA. The total of 75 casualties resulting from hostile action was a substantial reduction from the 119 and 251 during January and February, respectively, and approximated the monthly average of 76 during calendar year 1967.

There were 45 USAF aircraft lost, 36 of them in combat. Seven of the combat losses were in NVN, 11 in Laos, and 18 in SVN. During the first week of the month, two F-111A aircraft were lost, one in combat and one from operational causes. There were 10 MIG engagements, but no MIG kills or losses to MIGs. During March, 218 SAM firings were reported, a considerable increase from reported firings of 140 in January and 149 in February. <sup>12/</sup>

#### April

There were 89,082 sorties flown (71,909 in SVN, 9,352 in Laos, 4,974 in NVN, and 2,847 in Thailand). The bombing restriction north of the 19th parallel resulted in a concentration of offensive activity in the more southern portions of NVN. Munitions expenditures were 35,588 tons, more than 18,000 being expended in SVN. A continuing downward trend was represented by the 52 casualties from hostile action reported for April. There were 14 KIA, 22 WIA, and 16 reported as MIA.

The USAF lost 36 aircraft, 25 in combat. Ten of the combat losses occurred in SVN, 8 in NVN, and 7 in Laos. Another F-111A was reported missing on a strike mission in NVN and considered a combat loss. Seven MIG alerts were reported, but there were no MIG sightings or engagements. No aircraft were

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lost from SAM activity, but there were 8 SAM firings at USN aircraft. The decrease in SAM and MIG activity was attributed to the bombing restriction in the North. <sup>13/</sup>

#### May

A record high of 94,251 sorties were flown, 77,536 of them in SVN, 7,884 in Laos, 5,906 in NVN, and 2,925 in Thailand. Munitions expenditures also reached the record high of 38,715 tons, 23,898 of which were delivered in SVN. Partially attributable to the Second Offensive was an increase in USAF casualties resulting from hostile action during May. There were 25 KIA, 41 WIA, and 27 reported as MIA.

Of the 43 aircraft losses, 31 resulted from combat. Twenty of the combat losses occurred in SVN, 6 in NVN and 5 in Laos. USAF combat losses since the beginning of the calendar year totaled 171. During the same period in 1967, the USAF lost 122 aircraft in combat. The large number of combat losses in February and March during the TET Offensive and subsequent rocket and mortar attacks largely accounts for the difference. Between 1962 and the end of May 1968, the USAF had lost a total of 1,017 aircraft in combat.

The USAF reported no MIG kills or losses to MIGs, but one USN F-4B was lost during the two MIG engagements which occurred in May. The 34 SAM firings in May represented an increase from 8 in April, but was well below the monthly average of 289 during calendar year 1967. <sup>14/</sup>

#### Summary of Operations

During the entire period, 7AF aircraft flew a total of 609,047 sorties and delivered 241,584 tons of munitions. There were 125 7AF personnel KIA,



431 WIA, and 153 reported as MIA. Total aircraft losses, both combat and operational, were 283. Aircraft pilots under the operational control of 7AF shot down 14 MIGs; MIG pilots shot down 14 USAF aircraft. These actions are summarized by month:

Month	Sorties	Munitions	KIA	WIA	MIA	USAF MIG Kills	USAF Losses to MIGs	Total USAF Acft Losses
Nov 1967	81,465	33,490	7	30	29	2	4	43
Dec 1967	82,916	33,008	10	21	22	3	3	30
Jan 1968	87,713	35,470	15	85	19	4	4	41
Feb	81,395	30,649	38	199	14	5	3	45
Mar	92,225	34,694	16	33	26	0	0	45
Apr	89,082	35,558	14	22	16	0	0	36
May	94,251	38,715	25	41	27	0	0	43
TOTALS	609,047	241,584	125	431	153	14	14	283

B-52 sorties were also a good indicator of TACC operations, because this center was responsible for extensive support coordination and flight monitoring of all ARC LIGHT missions.<sup>15/</sup> Another example, indicative of two important aspects of TACC's function, is the following statistics which portray in-country divert and scramble activity. Authority for intercorps diversions rested with TACC; except for certain aircraft in I CTZ, TACC also retained scramble authority.<sup>16/</sup>



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In-Country Sorties Diverted and Scrambled

<u>Month</u>	<u>Diverted</u>	<u>Scrambled</u>
November	2,830	2,881
December	2,283	2,735
January	1,998	2,866
February	2,300	4,181
March	2,542	3,801
April	3,326	3,622
May	3,740	4,098
Totals	19,019	24,184



## CHAPTER II

### COORDINATION OF IN-COUNTRY TACTICAL AIR OPERATIONS

This chapter shows how offensive air operations in SVN were being coordinated with RVNAF/US/FWMAF. Essential to this purpose is a brief review of command and control factors; the major air and ground forces involved; their areas of operation; the method of allocating sorties to them as well as coordination procedures; and the systems which had been designed to guarantee that requisite coordination actually took place. It profiles how individual coordination was being accomplished with each major agency and force involved.

#### Command and Control

The Commander-in-Chief, Pacific (CINCPAC), had operational control of all combat forces in the area. Under him, COMUSMACV had operational control over all forces committed to the effort in SVN, Laos, and Route Package 1, known as the extended battle area. COMUSMACV was responsible for and directly influenced air operations in the extended battle area, although the out-country air operation was a multi-service effort under the overall guidance of CINCPAC.<sup>1/</sup>

#### Air Forces

Air forces for the total war came from tactical units of 7AF in SVN and the Seventh/Thirteenth Air Force (7/13AF) in Thailand, the First Marine Air Wing (I MAW), the Seventh Fleet (7FLT), the Vietnamese Air Force (VNAF), the Royal Australian Air Force (RAAF), and SAC's B-52 bombers operating from Guam and U-Tapao, Thailand. The out-country air effort was supported mainly by Thailand-based aircraft and carrier-based aircraft of 7FLT, augmented by



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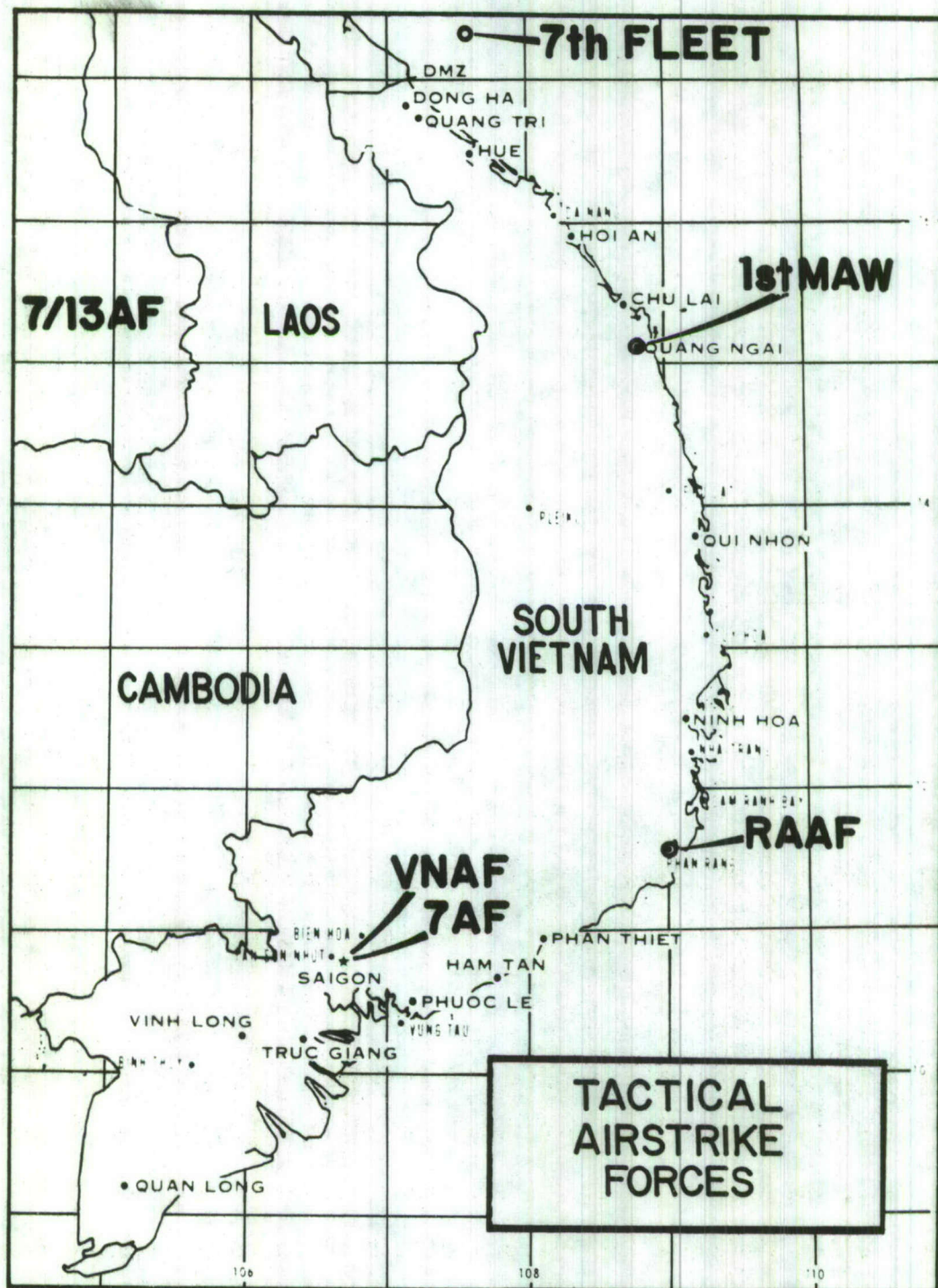


FIGURE 1

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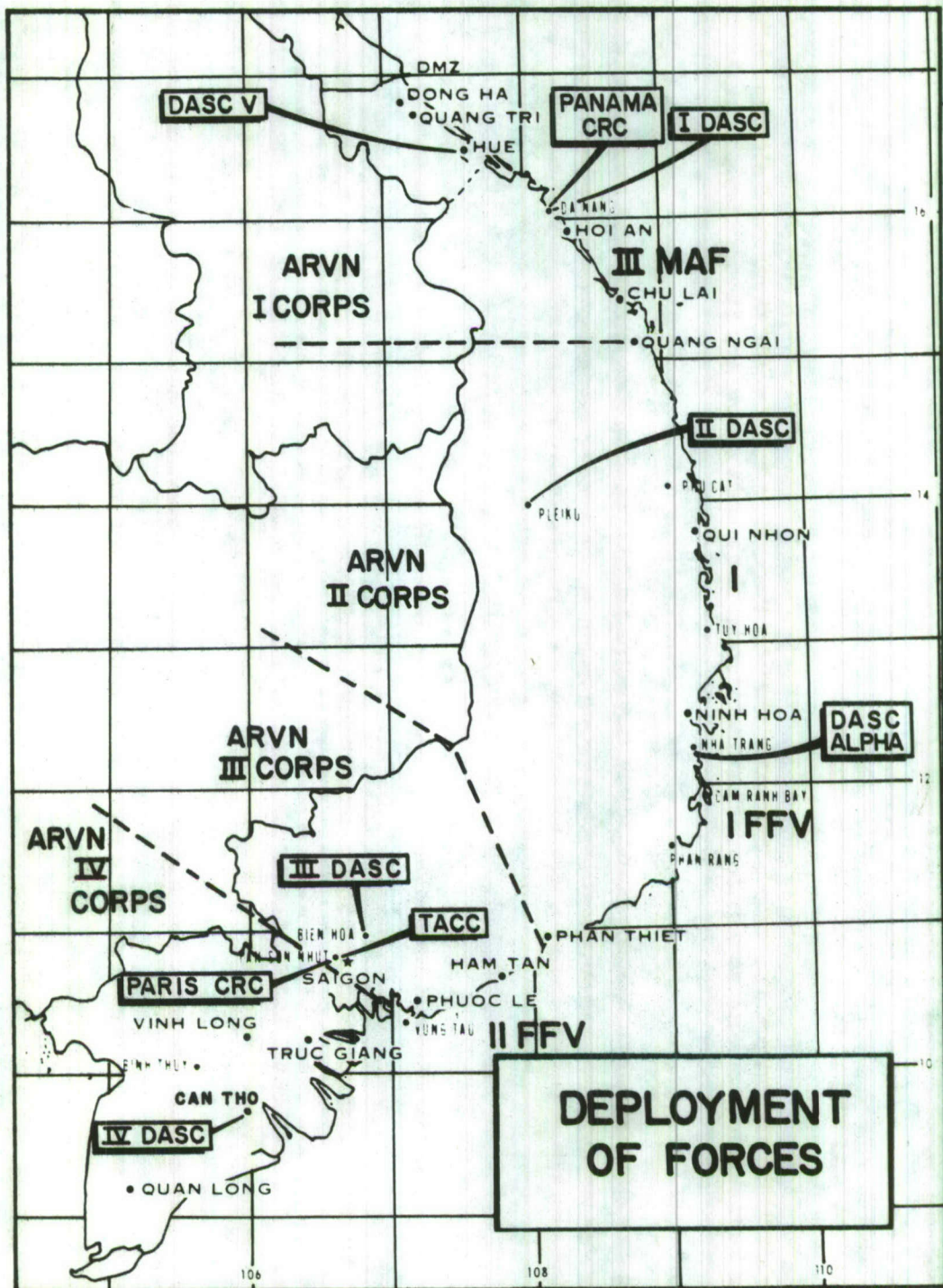


FIGURE 2

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in-country USAF and USMC forces.<sup>2/</sup>

Because of the termination of bombing in the northern part of NVN, the out-country air operation was limited to interdiction and counter-air in direct support of the South Vietnamese war. Thai-based aircraft operated in Laos and the southern portion of NVN. Aircraft of 7FLT, which were under the control of the Commander-in-Chief, Pacific Fleet (CINCPACFLT), operated in the area of NVN between Route Package 1 and the 19th parallel. In-country airstrikes were delivered by USAF and USMC aircraft based in SVN, and SAC's B-52s; USN aircraft were seldom used there. Republic of Vietnam (RVN)-based aircraft were used out-country to the extent determined by COMUSMACV.<sup>3/</sup> (See Fig. 1.)

#### Ground Forces

Specified ground commanders were responsible for designated geographical areas in SVN, and the paramount purpose of in-country offensive air operations was to assist the ground commander in attaining his military objectives. Tactical air operations were therefore dictated in large measure by the ground commander's scheme of maneuver and the enemy resistance he encountered.<sup>4/</sup> The major ground force commanders supported by in-country airstrikes were those of the four Army, Republic of Vietnam (ARVN) Corps, the Third Marine Amphibious Force (III MAF), the First Field Force Vietnam (I FFV), and the Second Field Force, Vietnam (II FFV).<sup>5/</sup> (See Fig. 2.)

#### Allocation of Sorties

Preplanned sorties were allocated to the major ground forces commanders



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on the basis of support priorities established by COMUSMACV. All airstrikes in SVN were still being conducted through preplanned missions, diversion of aircraft from preplanned missions, or scrambles of strip alert aircraft.<sup>6/</sup>

However, the system of allocating available sorties to satisfy the preplanned tactical air requirements of ground commanders was modified on 30 May 1968. Before then fragmentary (frag) orders for preplanned missions were issued on a daily basis only. Since then, a weekly and a daily frag have been issued. The purpose of this change was to provide ground commanders with relatively stable airstrike forces which would better enable them to develop reliable operational plans.<sup>7/</sup>

Under the former system, all preplanned operations needing tactical air support required the ground commanders starting at battalion level to submit daily mission requests through channels to the Military Assistance Command Vietnam's (MACV) Tactical Air Support Element (TASE). The initial mission request contained detailed information including the request number, the priority assigned by the battalion commander, target coordinates, target description, desired time over target (TOT), latest acceptable TOT, desired results, and recommended ordnance. At each succeeding level of ground forces command, this information was copied and consolidated with requests from other subordinate maneuver elements. New priorities were established and all requests were retransmitted to the next higher level of command, until they finally arrived at MACV TASE. This element established final priorities and passed the completed mission requests to TACC for processing and the issuance of frag orders.<sup>8/</sup>

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Under the new system, 70 percent of the preplanned sortie capability of the tactical air units were being allocated on a weekly frag order to the major ground commanders.<sup>9/</sup> The weekly sortie allocation was not based on detailed statements of requirements, arranged in order of priority, as was true under the previous system.<sup>10/</sup> Instead, these weekly sortie allocations were determined by COMUSMACV based on several factors, such as the geographical area, terrain features, friendly force strength, organic firepower, and mobility of units supported (helicopters, artillery, and armored vehicles), security of friendly forces and installations, security of population centers, and the security of priority areas.<sup>11/</sup>

It was intended that the weekly sortie allocation be used by the ground commanders to support a variety of activities, such as small unit operations, long-range reconnaissance patrols, cordon and search, column cover, landing zone preparation and cover, and to counter enemy-initiated attacks. Again, sorties were distributed to ground commands on the basis of priorities announced each week by COMUSMACV. Sorties allocated were then tasked by the ground commander to meet his operational requirements. The major ground commander was completely free to use these sorties in any way he saw fit, limited only by the capabilities of the aircraft and TACS.<sup>12/</sup> He could suballocate all, or part, or none of his weekly allocation. His allocation was almost tantamount to dedicated air, the major difference being that it was subject to withdrawal at any time by DEPCOMUSMACV for Air who responded to COMUSMACV guidance.<sup>13/</sup>

The remaining 30 percent of available preplanned sorties were allocated to subordinate commands through a daily frag. Under the modified system, each



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of the major ground commanders continued to submit daily requests for additional sorties, over and above his weekly allocation to support higher levels of conflict or to add firepower on newly acquired enemy targets.<sup>14/</sup> However, the method of requesting daily preplanned missions had been greatly simplified. As opposed to the detailed data previously required for each preplanned mission, the request now need contain only target description of identification of the operation to be supported, the number of required sorties, and the time over initial point (TOIP). This had of course reduced and simplified the processing workload for MACV TASE, and the TACC agency which issued the frag orders. Under the former procedures, it was extremely difficult for major ground commanders at Corps level to systematically process daily the great volume of data involved and still meet established submission deadlines. This simplification was thus considered to be a significant improvement in the mechanics of the system.<sup>15/</sup>

Figure 3 shows how weekly preplanned sorties were being apportioned, and Figure 4 illustrates how daily preplanned missions were requested and allocated.<sup>16/</sup> The details of mission accomplishment were worked out between the appropriate G-3s for Air at the ground forces Tactical Operations Centers (TOCs), the Direct Air Support Centers (DASCs), the Tactical Air Control Parties (TACPs), and the Tactical Unit Operations Centers (TUOCs) of participating air forces units. The system of responding to urgent requests of ground commanders for immediate tactical air support still functioned as discussed in the Hq 7AF Pamphlet, Nr. 55-1.<sup>17/</sup> (See Fig. 5.)<sup>18/</sup>

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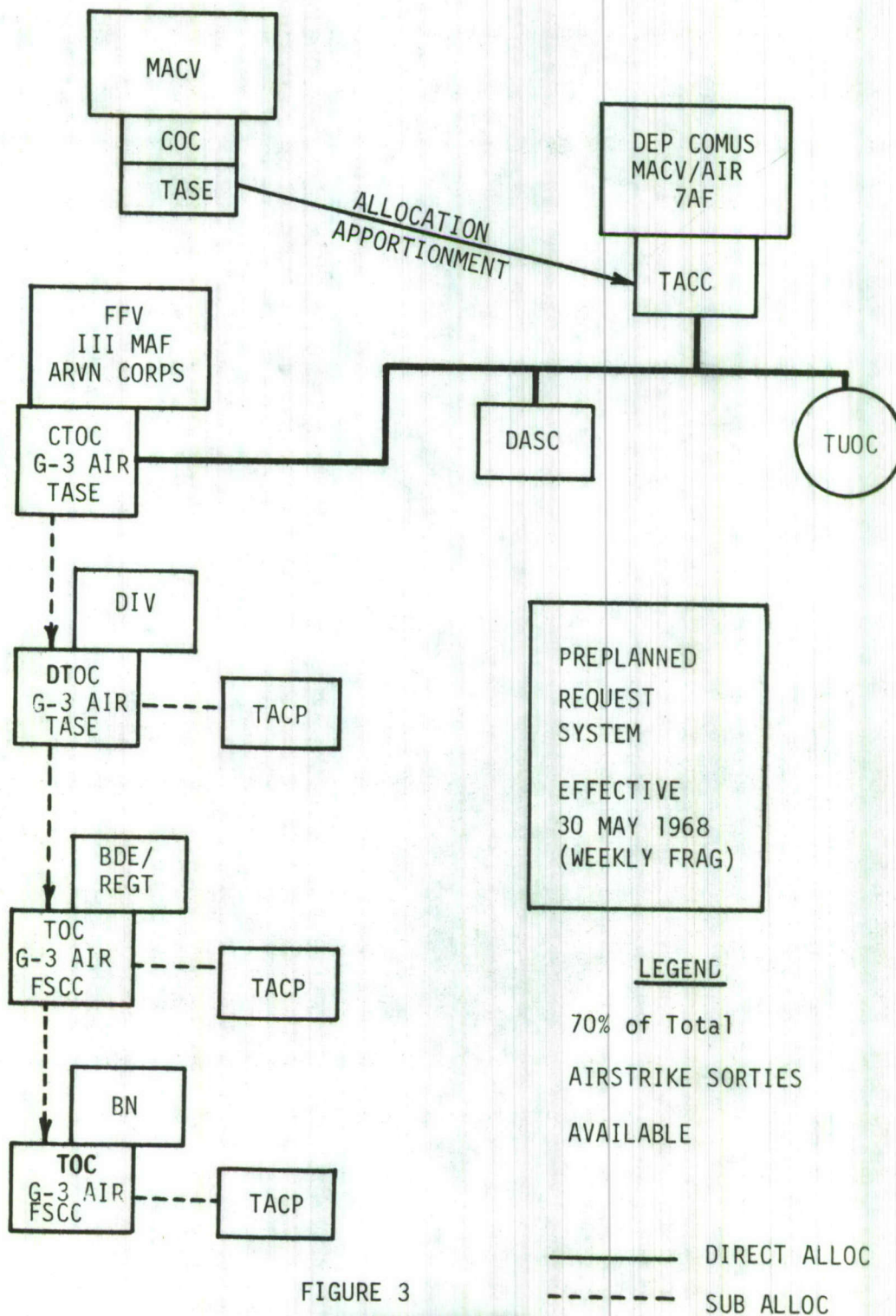


FIGURE 3



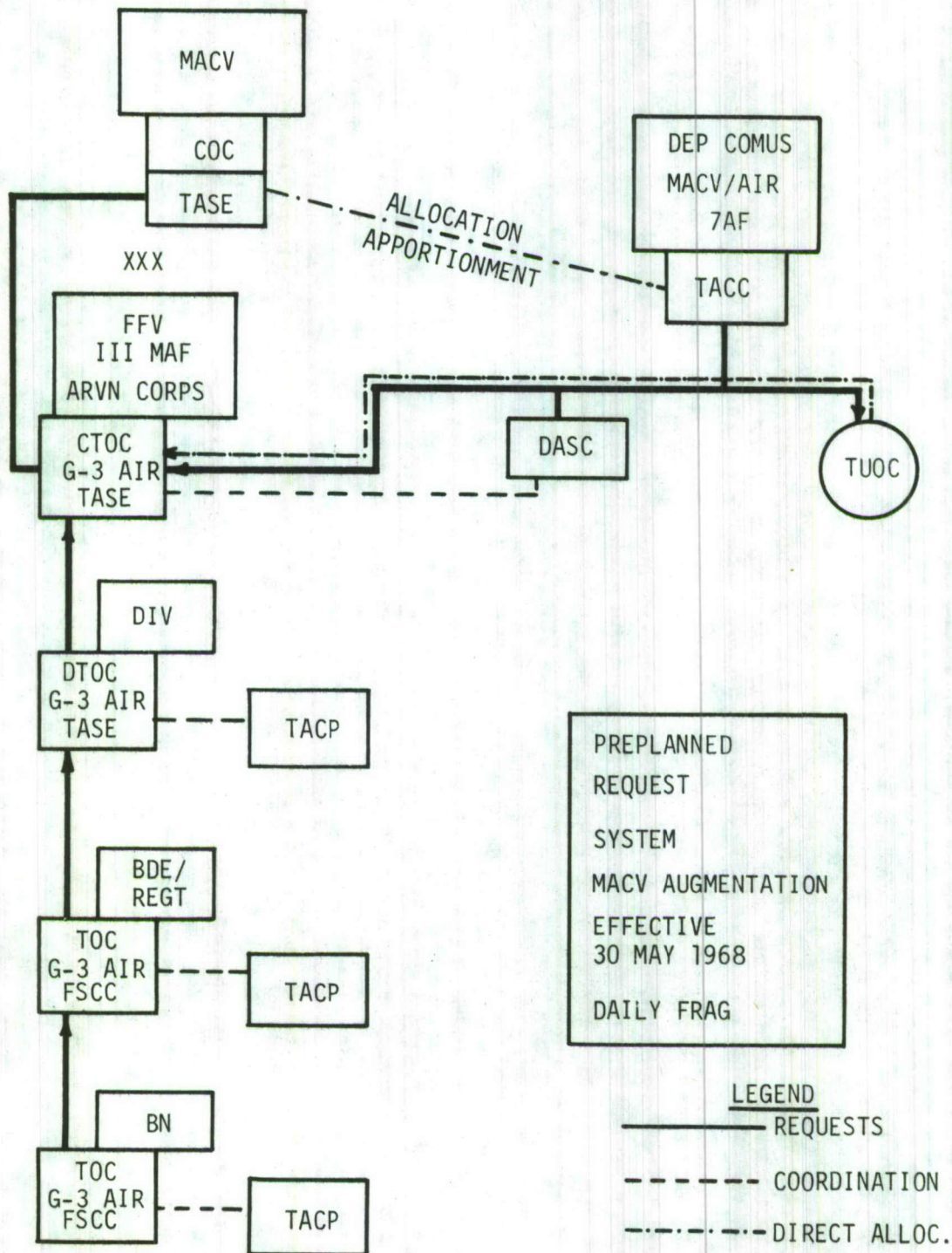


FIGURE 4



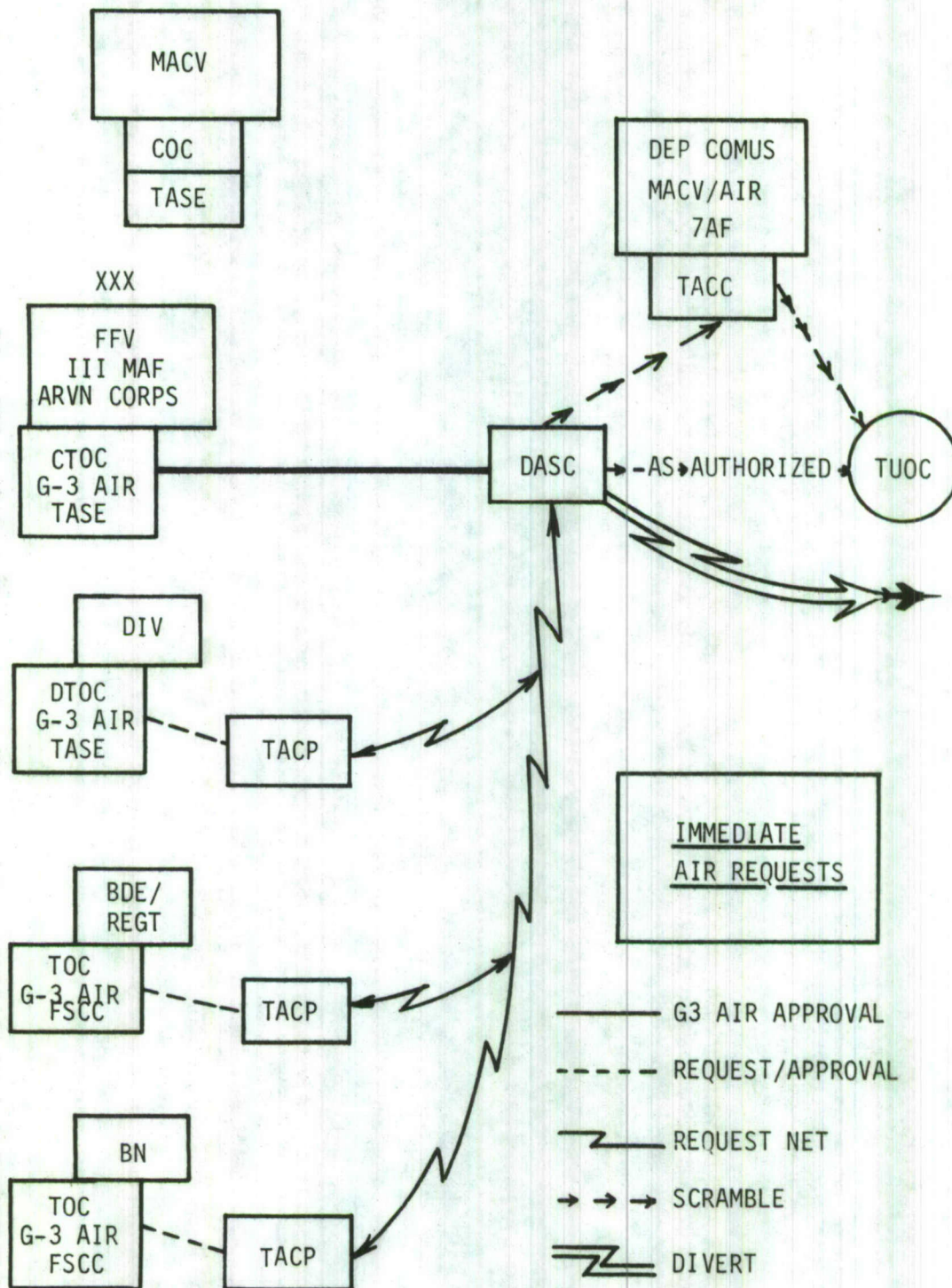


FIGURE 5



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The daily allocations enabled COMUSMACV to concentrate a significant airstrike force in a threat area without major disruption to plans and operations of other area commanders. In making his daily sortie allocation to the major ground commanders, COMUSMACV considered such factors as increased enemy threats, priorities for offensive action, expansion of area control, and the use of enemy lines of communication (LOCs). These daily sorties were intended to support operations such as the destruction of enemy troop concentrations, supply areas, and LOCs; and the neutralization of enemy base areas. They also enabled the ground commander to apply increased pressure on enemy forces in selected priority areas, and provide temporary assistance to the ground commander based on justified additional requirements for tactical air support.<sup>19/</sup>

Although the number of sorties available would periodically vary, statistics for the week of 9 through 15 July 1968 illustrate how sorties were allocated. These figures represent the actual planning data then available to officials who were responsible for determining sortie allocation. During that period, based on reports from the tactical units, it was estimated that the in-country aircraft of 7AF, I MAF, and the Canberras of the Royal Australian Air Force (RAAF) would probably produce 773 sorties. The out-country aircraft of 7AF, operating from bases in Thailand, would produce an estimated 249 sorties for total sortie productivity of 1,022. Carrier aircraft capacity of 7FLT was not considered, because it was being managed and controlled separately by CINCPACFLT, not by the DEPCOMUSMACV for Air.<sup>20/</sup>

From the 1,022 gross sorties available, 80 sorties were subtracted for high priority special missions as determined by COMUSMACV. Examples of such



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missions are operations committed to Gravel seeding, and Studies and Observation Group (SOG) support. This left a total of 942 sorties available for allocation to support both in- and out-country operations. In accordance with priorities established by COMUSMACV, 35 percent, or 330 sorties in this case, were planned for out-country operations and the balance of 65 percent, or 612 sorties, would be used for in-country operations. From the in-country sortie availability figure of 612 were subtracted 44 sorties to support in-country, high-priority special missions, such as escort of transport aircraft or helicopters and special strike zone interdiction missions. The remainder of 568 was again reduced by the subtraction of 132 sorties for the support of unforeseen requirements of ground commanders. "Immediate" sorties were those set aside for strip alert aircraft.<sup>21/</sup> The strip alert strike capability provided an emergency back-up force to all ground commanders. These sorties were not allocated to a single ground commander since the number of required scrambles from the alert pad was an unknown quantity.<sup>22/</sup> The number of sorties set aside for "immediates" was based on experience factors and adjusted as conditions changed.<sup>23/</sup>

The balance of 436 sorties available for preplanned missions was then available for allocation to the major field commanders in the weekly and daily frag orders, 70 percent or 306 sorties, for the weekly allocations, and 30 percent or 130 sorties, for daily allocations. These statistics summarize the planning data on which sortie allocation were based:<sup>24/</sup>



# JOINT AIR-GROUND OPERATIONS SYSTEM

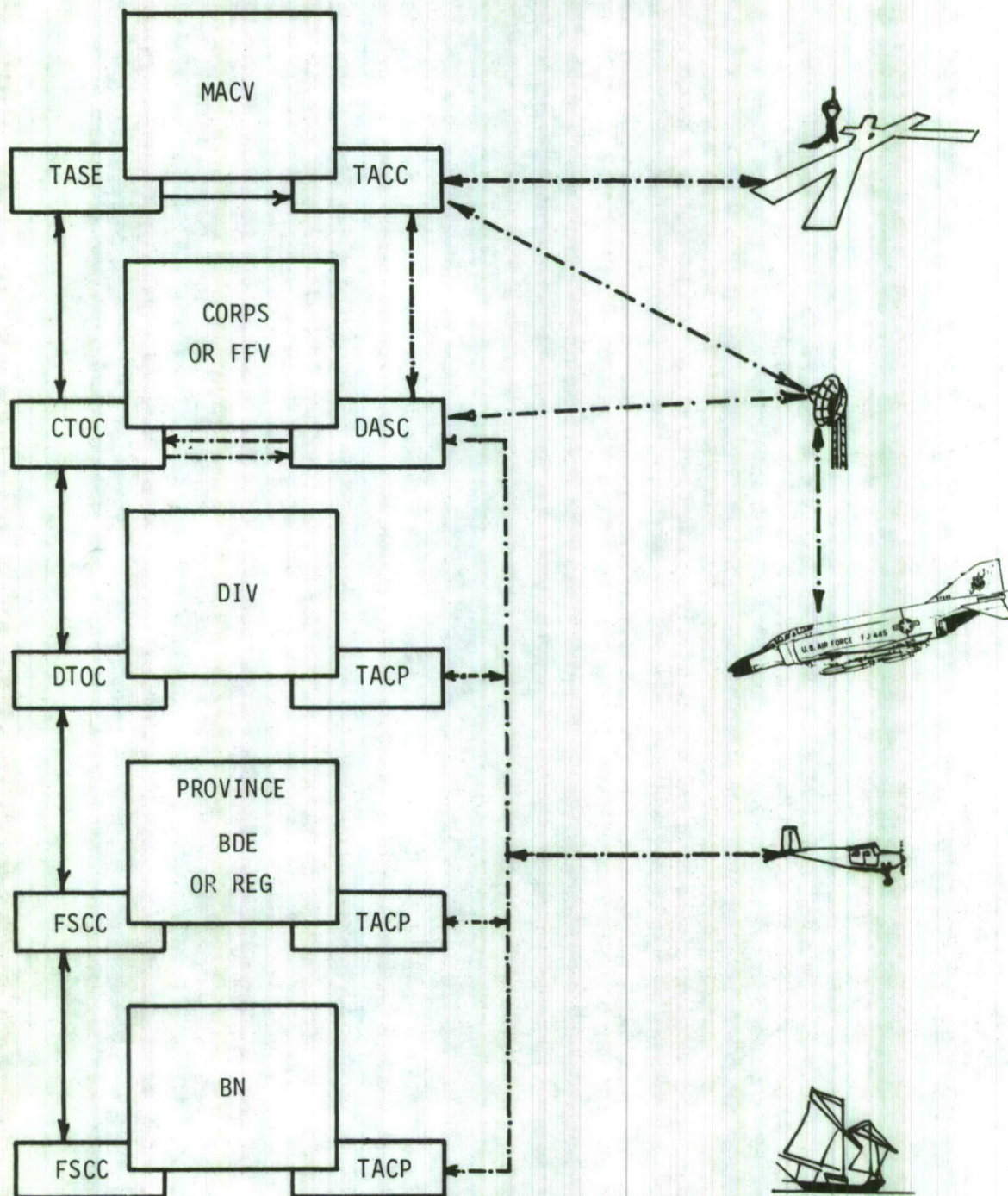


FIGURE 6

IMMEDIATE - - - -  
PREPLANNED ———

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FRAGMENTARY OPERATION ORDER  
PLANNING DATA 9 - 15 JULY 1968

Available Sorties In-Country	773
Available Sorties Out-Country	249
Gross Available Sorties	<u>1,022</u>
Less High Priority Special Missions	<u>-80</u>
Available for Allocation	942
35% Out-Country	330
65% In-Country	612
Less Specials	<u>-44</u>
	568
Less Immediate Sorties	<u>-132</u>
Available for Preplanned Missions	436
70% for Weekly Allocations	306
30% for Daily Allocations	130

To provide the necessary direction and control of the strike forces committed in the weekly and daily frag orders, as well as the scramble sorties, the integrated TACSS of 7AF and I MAW, and the Army Air-Ground System (AAGS), were used. As discussed in Hq 7AF Pamphlet, Nr. 55-1, these systems had the required communications and control facilities through which the senior air commander could coordinate and direct the airstrike effort. <sup>25/</sup>

Joint Air-Ground Operations System

The Joint Air-Ground Operations System (JAGOS) was a composite of integrated command and control systems; it was established at the direction of COMUSMACV to insure integration of the Army Air-Ground System and the Tactical Air Control System. Included in the JAGOS were the MACV Command and Control System, the AAGS and the TACS of 7AF and I MAW. <sup>26/</sup> A MACV directive required coordination of air activities to take place at all levels of JAGOS to eliminate conflict among participating forces and to insure required support. <sup>27/</sup>



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All requests for air support, accordingly, were processed through it.<sup>28/</sup>

Through the Joint Air-Ground Operations System, tactical air operations were being coordinated with all RVNAF/FWMAF in Southeast Asia.

### Army Air-Ground System

The Army Air-Ground System (AAGS) was integral to the Army tactical support system. It had the organization, people, and equipment needed to process, evaluate, and coordinate fire and reconnaissance requests at all levels from battalion to the senior ground force headquarters. It enabled the rapid and continuous exchange of information on army and tactical air operations. It was through this system that the ground commander integrated the use of close air support, air interdiction, tactical air reconnaissance, and aerial battle-field surveillance, with all other means of tactical support.<sup>29/</sup>

The Tactical Air Support Element (TASE) of the MACV Combat Operations Center (COC), was the highest echelon of the AAGS. At this level, operations of the MACV COC and TACC were coordinated.<sup>30/</sup> TASE and the Strike Plans Branch of TACC occupied adjacent offices; a TASE representative was always physically present or immediately available to TACC's COC.<sup>31/</sup>

At MACV level, the prime function of TASE was to allocate available sorties to ground commanders in accordance with priorities established by COMUSMACV. It also processed and passed to TACC for execution all approved sortie allocations and preplanned strike requests. Furthermore, TASE had Ground Liaison Officers (GLOs) stationed at U.S. strike aircraft bases, where they worked in an advisory capacity. GLOs were available to brief pilots who

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delivered aerial firepower in support of ground operations and to debrief them upon landing. Additionally, TASE Air Reconnaissance Liaison Officers (ARLOs) <sup>32/</sup> were stationed where tactical aerial reconnaissance aircraft were based.

The heart of AAGS was the Army air staff members, who were assigned at each descending level of Army command down to battalion. These staff members were identified as G2/G3-Air (intelligence and operations) at corps and division levels, and S2/S3-Air at brigade, regiment, and battalion levels. At ground forces command levels of RVNAF/FWMAF were also stationed G2/G3 Air Advisors and S2/S3 Air Advisors. The TACS counterparts of these Army staff elements were the DASCs and TACPs, which were normally collocated; they worked closely with each other. The USMC forces under III MAF had their own tactical air control and air-ground systems similar to the AAGS; they were integrated with the 7AF TACS. Moreover, all ARVN and FWMAF serving in SVN had their own air-ground systems patterned after the AAGS and integrated with TACS. <sup>33/</sup>

In summary, at each headquarters from the battalion to senior tactical command, AAGS and TACS personnel were collocated as an air-ground team to assist the commander in integrating close air support with other means of tactical support. During the process of planning airstrikes, USAF personnel provided advice and assistance to the Army command level at which they served. Preplanned requests for airstrikes were transmitted over Army facilities. USAF communications nets were used for processing immediate requests. A request for an immediate airstrike was sent from the TACP to the DASC, which supported the ARVN Corps, III MAF, or FFV, using the immediate air request net. All echelons monitored and acknowledged the request. If any level disapproved



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it, the TACP notified the DASC that the request was cancelled. While it awaited approval or disapproval from the ground force commander, the DASC did whatever coordination and planning were necessary to carry out the request. <sup>34/</sup> The DASC acted immediately to satisfy approved requests.

All combat ground units, regardless of nationality, requested their preplanned airstrikes through the ARVN and FFV AAGS nets or the III MAF equivalent. Again, advisors serving with RVNAF/FWMAF had separate communications nets, which could serve in emergency situations. <sup>35/</sup> Any isolated combat

maneuver unit had access either to the AAGS, or its equivalent, of the U.S. Army, USMC, ARVN, or FWMAF. <sup>36/</sup> There was a TACP or its equivalent at every

combat maneuver element down to and including separate maneuver battalion level, irrespective of the nationality of the ground unit involved. Every ground forces' combat element could request immediate tactical airstrikes through this structure. <sup>37/</sup> The TACP had immediate communications access to

the nearest DASC, which could promptly contact TACC for help, if the required support was beyond DASC capability or authority. <sup>38/</sup> The Army G3-Air at DASC

level was usually the approving authority for diversions from preplanned missions. TACC had the authority to direct intercorps diversions from preplanned missions, but usually coordinated the action with MACV TASE. <sup>39/</sup>

Southeast Asia Integrated  
Tactical Air Control System

Relevant to the subject of coordination was one additional composite system with which TACC was associated. This was the Southeast Asia Integrated Tactical Air Control System (SEAITACS).



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There were several tactical air control systems on the mainland of Southeast Asia. In Thailand, there was one controlled by the Thais and one of the 7/13AF, under operational control of the 7AF Directorate of Combat Operations (DOC). There were three major and much more extensive systems in SVN--the VNAF; the USMC; and the USAF--all under operational control of TACC. Each of these systems was integrated and responsive to the direction of the Seventh Air Force Commander.<sup>40/</sup>

The 7AF Commander, in addition to his role as DEPCOMUSMACV for Air, was also directly responsible to the Commander in Chief, Pacific Air Forces (CINCPACAF), as Commander of the Mainland Southeast Asia Air Defense Region.<sup>41/</sup> To fulfill this responsibility and to enable the area-wide control of air-strikes which might be required in the future, CINCPAC directed the establishment of SEAITACS.<sup>42/</sup>

SEAITACS included all TACCs, DASCs, Control and Reporting Centers (CRCs), and their subordinate and supporting elements; all combat evaluation and control units and support groups and squadrons; and the personnel and equipment of the tactical air control systems of the three nations involved.<sup>43/</sup>

SEAITACS was an integrated air defense and tactical air control system including interconnecting and compatible communications, radars, control facilities, procedures, and joint manning, where feasible, for U.S. and Free World forces on the mainland of Southeast Asia.<sup>44/</sup>

In SVN, the USMC system was tied to the 7AF system which was combined with the national aircraft control and warning (AC&W) system.<sup>45/</sup> In Thailand,



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the 7/13AF TACC at Udorn was not jointly manned, because of the political sensitivity and security implications, which stemmed from its mission; i.e., the control of operations in Laos and North Vietnam. The Thai TACC at Don Muang, however, was jointly manned. Also, the one Thai DASC was a joint facility as were certain other elements of the Thai TACS, such as CRCs and Control and Reporting Posts (CRPs).<sup>46/</sup> It was the integration through standardization of the combined systems in SVN and Thailand--common training, common equipment, common communications, and common procedures--which formed the basis of SEAITACS.<sup>47/</sup>

The aircraft of the USN on carrier alert in the Gulf of Tonkin had the missions of protecting the fleet and striking a specified area in the North. They were not a part of SEAITACS, but SEAITACS would coordinate their effort should they be required to participate in joint operations.<sup>48/</sup>

#### Coordination with Individual Agencies and Forces

The coordination process applied to individual US/RVNAF/FWMAF agencies and forces as follows:

##### Coordination with MACV

In his role as DEPCOMUSMACV for Air, the 7AF commander helped to determine the apportionment of sorties, participated in the major decisions on how tactical airstrike capability would be employed, and then, in his role as 7AF commander, directed and supervised the execution of these decisions. Moreover, as previously described, the daily working relationship between MACV TASE--the air-ground operations element of the MACV Command Post--and TACC



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was extremely close. Offices of TASE were adjacent to the office of the TACC Strike Plans Branch and in close proximity to the TACC COC. A member of TASE was frequently present within the Center.<sup>49/</sup>

#### Coordination with U.S. Army

The Joint Air-Ground Operations System with its complex of Command and Control, Army-Air-Ground Operations, and Tactical Air Control systems, as explained previously, provided coordination at all echelons.

#### Coordination with U.S. Navy

There were several established channels for the coordination of USN and RVNAF/US/FWMAF operations in SEA. Operational control over naval gunfire was exercised by the Commander, Seventh Fleet (COM7FLT), who supported MACV operations. Fire support was coordinated by the major CTZ ground commander being supported, who issued the necessary warning notices to all agencies concerned.<sup>50/</sup> A naval liaison officer was positioned with each DASC, when necessary, to coordinate naval gunfire and assist in the clearance of friendly aircraft from the area. Pilots also got information on naval gunfire from the Ground-Controlled Intercept (GCI) system of TACS.<sup>51/</sup>

USN operations in isolated inland areas could quickly be supported by in-country tactical airstrikes; if necessary, through communication with the ARVN sector and access to TACS. Moreover, U.S. advisors were present in each sector and sub-sector and had their own request nets which could be used if necessary.<sup>52/</sup> Designated TACPs worked directly with USN surface elements during larger operations, as was the case with the Mekong Delta Mobile Riverine



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Force (MDMRF).<sup>53/</sup>

A 7AF directive required that an USAF officer from Seventh Air Force perform liaison duties with 7FLT. He was to act as an advisor on technical and tactical aspects of USAF operations in SEA, participate in the commander's daily briefing, present a summary of USAF strike operations, and assist the commander and staff in coordinating operations with 7AF.<sup>54/</sup>

CINCPACFLT, through COM7FLT, provided strike aircraft as directed by CINCPAC to operate in coordination with JAGOS. According to MACV directives, 7FLT liaison officers were to be provided to JAGOS when its aircraft participated in joint operations or provided close air support.<sup>55/</sup> However, the central point for coordination of all USN operations with MACV, DCS/O offices of 7AF, and field commands, was the USN Liaison Office (NAVLO) permanently located at Tan Son Nhut Air Base.

NAVLO, under the operational control of COM7FLT, was able to communicate rapidly with all USN task group commanders in the theater via the fleet flash net. Accordingly, communications with naval units normally flowed through this office, when they required high transmission speed.<sup>56/</sup>

NAVLO assisted TACC in obtaining current information on the location of all USN shipping in the area. These data were displayed and updated daily on the plotting board in TACC's COC. NAVLO had little other liaison with TACC as of 15 July 1968. It did work closely, however, with DOC on a daily basis.<sup>57/</sup>

USN airstrike operations were normally being conducted in the area



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between Route Package 1 and the 19th parallel. NAVLO received copies of frag orders from DOC and daily strike planning messages from Carrier Task Force 77 (CTF-77). NAVLO extracted pertinent information from these data and made it available to both agencies, so that each would know where, when, and by what routes the missions of the other would be flown.<sup>58/</sup>

In the past, however, NAVLO had also worked closely with TACC during special operations requiring in-country carrier-based airstrikes; i.e., Operation NIAGARA. During such operations, when the USN strike aircraft entered a predesignated area, they came under the control of TACS. Direct control of in-country USN airstrikes was normally exercised by the Airborne Battlefield Command and Control Center (ABCCC). TACC furnished NAVLO with all pertinent data on targets, ordnance, control procedures, etc., and then NAVLO transmitted the information to the tasked units. CTF-77 would in turn notify NAVLO of final mission plans, including time over target.

Should a complete termination of airstrikes in NVN ensue, USN strike aircraft would presumably commence operations in SVN and Laos, after which a drastic increase in the degree of operational communication between NAVLO and TACC would result.<sup>59/</sup> The 7AF Commander had developed a plan for employing USN carrier-based airstrike capability in SVN and Laos, in the event of a complete bombing halt in NVN. It contained recommendations regarding the stationing of aircraft carriers and the use of USN sortie capability. Under this plan, Navy forces would remain under the operational control of 7FLT with strike aircraft being tactically controlled in-country through the 7AF TACS. Stand-ard weekly schedules for Navy sorties would be worked out in coordination with

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7FLT representatives and adjusted daily as mutually agreeable. The plan also suggested the desirability initially of providing CTF-77 personnel with special briefings by 7AF and MACV representatives on such matters as rules of engagement, restricted areas, control procedures, and safety. Copies of relevant 7AF and MACV directives would also be provided to CTF-77.<sup>60/</sup>

#### Coordination with USMC

A Single Management system for the use of tactical airpower in SVN was adopted on 10 March 1968. DEPCOMUSMACV for Air was given responsibility for managing and directing all tactical airstrikes and reconnaissance forces committed to the MACV effort. The objective of Single Management was to increase the responsiveness of, and centralize the operational control over such forces.<sup>61/</sup>

The major change brought about by Single Management was the transfer of operational control over SVN-based USMC strike and reconnaissance fixed-wing aircraft from III MAF to 7AF. From 10 March, TACC had issued the fragmentary orders tasking these aircraft. However, the control of USMC strike and reconnaissance aircraft was neither as complete nor as potentially enduring as was desired by DEPCOMUSMACV for Air.<sup>62/</sup>

In any event, USMC forces in SVN had their own air-ground and air control systems similar to AAGS and TACS. Superimposed upon the USMC TACS was the 7AF TACS, which had I DASC positioned in I CTZ to support the operations of III MAF. Also in I CTZ was I DASC's subordinate DASC Victor, which had been established to coordinate and control air operations in SVN's two northernmost provinces in support of III MAF's subordinate command, Provisional Corps



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<sup>63/</sup>  
Vietnam (PCV). Coordination was thus indigenous to the system.

The Directorate of Combat Operations fragged reconnaissance aircraft (and strike aircraft when they operated out-country) of I MAW. TACC fragged I MAW strike aircraft when they operated in-country. However, existing agreements stipulated that I MAW aircraft would normally be used first to support USMC requirements. Tactical airpower of I MAW was thus being applied predominantly in I CTZ.<sup>64/</sup>

III MAF had been directed by MACV to establish combined planning and coordination measures regarding III MAF/USAF/VNAF air operations in I CTZ and the northern areas. III MAF had also been instructed to keep TACC apprised of planned ground operations and possible reinforcement requirements from other tactical air resources under 7AF control.<sup>65/</sup>

A direct representative of the III MAF commander was assigned as Marine Liaison Officer (MARLO) with COMUSMACV and DEPCOMUSMACV for Air. Familiar with USMC organization, air-ground tactics, and methods of operation, he attended daily meetings, provided information and guidance on a wide variety of USMC matters, and helped to resolve problems and misunderstandings emanating from multi-service operations in I CTZ.<sup>66/</sup>

Another avenue for coordinating USAF/USMC matters was the partial manning of MACV TASE, TACC, and DOC with USMC officers.<sup>67/</sup>

#### Coordination with SAC

The SAC Advance Echelon (SAC ADVON), organized in January 1967 (previously SACLO), and located at Tan Son Nhut Air Base, was under the direct

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operational control of the Deputy Chief of Staff for Operations (DCS/O), Headquarters SAC, and served as the liaison and coordination agent for all B-52 strikes and tanker refueling operations (ARC LIGHT and YOUNG TIGER, respectively) conducted within the theater. It coordinated these operations with Hq SAC, the Third Air Division (3AD), and several operations agencies within Hq 7AF and MACV. Of the two organizational elements of SAC ADVON, one dealt with refueling operations and the other with B-52 strike operations.<sup>68/</sup>

The vast majority of refueling operations involved out-country missions. When refueling operations supported out-country missions, SAC ADVON's point of contact and coordination was DOC; it was the Tactical Air Control Center when in-country strike missions were involved. For refueling support of in-country operations, the request was received in SAC ADVON from the Strike Plans Branch, TACC, after which if the support could be provided, SAC ADVON issued frag orders tasking the tanker units.<sup>69/</sup>

TACC's principal communication with SAC ADVON involved B-52 strikes. SAC ADVON prepared strike requests to 3AD in the name of the DEPCOMUSMACV for Air, and coordinated with the Bomber Plans Branch, TACC, to insure provision of required support by 7AF. A representative of SAC ADVON was physically present in the TACC Combat Operations Center when B-52 missions were performed in high-threat areas.<sup>70/</sup>

SAC ADVON also coordinated required altitude reservations with the Bomber Plans Branch, TACC, and with the Ground Environment Division, Directorate of Operations and Training, Hq 7AF, which was the DCS/O agent for

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coordinating air traffic control matters with the Saigon Air Route Traffic Control Center (ARTCC).<sup>71/</sup>

#### Coordination with VNAF

A VNAF colonel was the titular director of the Tactical Air Control Center. Its COC and other offices were jointly occupied by USAF/VNAF personnel. Each service ran an independent but parallel operation. Within TACC, VNAF fragged its own aircraft with the direct assistance of 7AF personnel. Joint occupancy facilitated coordination when joint or supporting USAF/VNAF operations were required.<sup>72/</sup>

All DASCs, except DASCs Victor and Alpha, were jointly occupied by USAF/VNAF personnel, where additional coordination of the air effort took place. DASCs Victor and Alpha were not jointly occupied, because neither the VNAF nor ARVN conducted operations in the tactical areas of responsibility (TAOR) served by those DASCs. Again, within the other DASC structures, independent but parallel operations for their respective forces were performed by USAF and VNAF personnel.<sup>73/</sup>

The deputy director of TACC also served as Liaison Officer with the RVN Joint General Staff (JGS). He was available to serve in an advisory or consultant capacity, if called upon by JGS. Additionally, this position represented a potentially useful channel through which he could endeavor to settle any controversy regarding USAF/VNAF operations that could not be resolved through negotiation at a lower level. During the tenure of the present deputy director, he had not been called upon by JGS, nor had it been necessary



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for him to resort to this medium for the solution of USAF/VNAF problems.<sup>74/</sup>

Finally, the 7AF commander was required by MACV directive to maintain a TACS advisory effort with the VNAF.<sup>75/</sup>

#### Coordination with ARVN

There was a Tactical Air Control Center Party at every ARVN sector. A sector was the military equivalent of a political province. ARVN forces needing immediate airstrikes sought them first from VNAF. If the requirement exceeded VNAF capability, the ARVN commander contacted his S3-Air. Even a small detached ARVN unit had communications access with the battalion or higher S3-Air. The S3 would notify the TACP, after which the DASC or TACC would be asked to provide immediate support.<sup>76/</sup> Preplanned ARVN requirements which could not be supported by VNAF came through the ARVN net to TASE for fulfillment by US/FWMAF airstrike capability, following the procedures previously described in this chapter.<sup>77/</sup>

U.S. Army senior air advisors had been instructed by MACV directive to maintain an AAGS advisory effort down to and including each ARVN regiment/sector, and to establish adequate procedures to permit other advisory units and activities (Military Rail Service, Coastal Surveillance Centers, and River Assault Group Headquarters), a means of entry into JAGOS.<sup>78/</sup> There was a senior army advisor in IV Corps. No major U.S. ground forces commanders were located in IV CTZ as was true in the other three CTZs. U.S. and other riverine or ground forces, except ARVN, operating in IV CTZ, usually obtained support from III DASC; however, ARVN IV Corps obtained support from IV DASC.<sup>79/</sup>

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### Coordination with Regional and Popular Forces

The acquisition and control of airstrikes for the RVN Regional and Popular Forces (RF/PF) was still a problem, because not all RF/PF possessed adequate communications equipment for initiating strike requests and for establishing air-ground communication with the Forward Air Controller (FAC) and the forces requiring support. It was anticipated that this problem would be overcome through the provision of RF/PF with the necessary equipment, an effort which was well underway by mid-August 1968.<sup>80/</sup>

### Coordination with ROK Forces

Command and control of all Republic of Korea (ROK) forces in SVN was retained by the Korean Commander, but coordinated operational planning enabled ROK units to operate in concert with U.S. and other FMAF. The Second ROK Marine Brigade, deployed in I CTZ, received most of its tactical air support from I MAW, and was otherwise supported by III MAF. The ROK Capital Division (the "Tiger Division") and the ROK 9th Division (the "White Horse Division") were operating in II CTZ with I FFV. These units received both their immediate and preplanned tactical air support through established III MAF or I FFV command channels, depending upon their location. They had been provided with 7AF TACPs or the USMC equivalent.<sup>81/</sup> These media, together with their counterpart of the AAGS, furnished the means for coordinating tactical air support.<sup>82/</sup>

Moreover, a ROK officer, assigned at TACC in a liaison capacity as air representative, was available to coordinate ROK operations with the 7AF staff, if required. However, he had not been active in this role.<sup>83/</sup>

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#### Coordination with Australian and New Zealand Forces

The first Australian Task Force was under the operational control of II FFV. The New Zealand combat forces in SVN were operating with and under the operational control of the First Australian Task Force. Tactical air support needed by them was being met by tasking combined VNAF/US/FWMAF resources as determined by COMUSMACV. Australian and New Zealand forces received both their immediate and preplanned tactical air support through established II FFV channels.<sup>84/</sup> They, too, had been furnished 7AF TACPs and also had their counterpart of the AAGS.<sup>85/</sup> The three B-57 Canberra squadrons of the RAAF were under the operational control of the 7AF Commander, and were being fraggged by TACC in the same manner as other 7AF SVN-based air units.<sup>86/</sup>

#### Coordination with Royal Thai Forces

Thai ground forces serving in SVN were under the operational control of the U.S. 9th Infantry Division in III CTZ under II FFV. They had been provided with the same or similar tactical air request and coordination media as had other US/FWMAF, and were using established 9th Infantry Division/II FFV channels for this purpose.<sup>87/</sup>

#### Coordination with Republic of Philippines Forces

The First Philippine Civic Action Group, Vietnam (PHILCAGV) was basically a noncombatant unit engaged in civic action work.<sup>88/</sup> Serving in III CTZ, the tactical air request nets of both II FFV and the ARVN III Corps commander were available to PHILCAGV.<sup>89/</sup>

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## Political Coordination

All expenditures of ordnance in SVN required approval of the province chief or higher Vietnamese political authority.<sup>90/</sup> The ground forces requesting close air support were responsible for obtaining required SVN political clearance for airstrikes. As the system was established, the submission of a request for an airstrike, either to MACV TASE or TACC, indicated, per se, that political approval had been granted.<sup>91/</sup>

En route air traffic control was a function of the Director of Civil Aviation. It was exercised through the Joint SVN/US Air Coordination Committee, which coordinated the use of civil and military communication and navigation facilities and personnel. Terminal air traffic control was a function of TACS and the supported ground force commander.<sup>92/</sup>

## Summary of Coordination Process

The effective coordination of tactical air operations in SVN depended on three major elements: people, communications, and systems. SVN was blanketed with a vast network of rapid communications facilities which covered the entire nation, linking all agencies to the systems which have just been described.<sup>93/</sup>



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## CHAPTER III

### ORGANIZATION AND FUNCTIONS OF 7AF TACTICAL AIR CONTROL CENTER

#### Control Centers of TACS

Identification of the several Seventh Air Force tactical air control centers will help to limit and clarify the role of the 7AF TACC. By mid-July 1968, four control centers were located at Tan Son Nhut Air Base alone, all concerned with the direction and control of tactical airpower.<sup>1/</sup>

There was the Combat Operations Center under TACC. TACC was primarily concerned with the in-country airstrike and the air defense role. It exercised daily operational control for the 7AF Commander over the in-country DASC and CRC structures, the latter of which included the AC&W system.<sup>2/</sup>

A COC called the "Command Center" was under the Directorate of Combat Operations. DOC was concerned with the out-country airstrike mission and with both the in- and out-country tactical reconnaissance mission and the in- and out-country electronic warfare mission. It had operational control over the out-country TACS, including the ABCCC which was not normally, but had sometimes been used in SVN to direct the air portion of special operations.<sup>3/</sup> When used in-country, TACC had assumed operational control over the ABCCC.<sup>4/</sup>

Still another control center was being operated by the 834th Air Division, under the 7AF commander--the Airlift Control Center (ALCC)--an integral part of TACS, which was operationally a part of, but not controlled by TACC, with the manifold missions of directing and controlling airlanded operations and resupply, airborne operations and resupply, aeromedical evacuation, and



[REDACTED]

defoliation. <sup>5/</sup>

A final control center--the Joint Search and Rescue Center (JSARC) of the Third Aerospace Rescue and Recovery Group (3d ARRG), under the 7AF Commander--operationally connected to but not controlled by TACC, was responsible for coordinating and controlling the forces engaged in search and rescue missions. <sup>6/</sup> It was collocated with the Directorate of Combat Operations' Command Center (CC). <sup>7/</sup>

#### 7AF Command Center

Envisioned for Tan Son Nhut Air Base was still another control center. <sup>8/</sup> Plans had been completed for a new building which would accommodate this 7AF Command Center. The primary purpose of the new facility was to replace the present manual Command Center with a computerized CC. <sup>9/</sup> Space was also being provided for a manually operated Situation Operations Center (SOC). The SOC would display detailed data on special operations of particular interest to the commander and his staff. <sup>10/</sup>

Except for the acquisition of an automatic data processing capability, the CC would continue to function in much the same way as it did at the end of this reporting period. Moreover, no essential change was being planned, either for the operating location or the manual operating methods of TACC's Combat Operations Center, which was then and would continue to be physically



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separate from the CC. It was planned that the JSARC, which was then collocated with CC, would also be moved to the new building and remain collocated with CC.<sup>11/</sup>

Although the new Command Center would replace that of the Directorate of Combat Operations, the 7AF Commander and his staff still did not have, in a single location, a comprehensive and near real-time picture of the total air war in progress.<sup>12/</sup>

#### Deputy Chief of Staff for Operations

TACC was one of five staff directorates under DCS/O, who was directly responsible to the 7AF Commander. (See Appendix I). Among other responsibilities, the DCS/O exercised staff supervision over and established training requirements for operating elements of TACS. He exercised this control through the Directorate of TACC (in-country) and the Directorate of Combat Operations (out-country). TACC, DOC, and the Thai-based ABCCC, were 7AF staff elements under the operational control of DCS/O. In coordination with DCS/O, the Deputy Chief of Staff for Plans provided staff guidance and support to include manning and equipping requirements for the TACS.<sup>13/</sup>

The Air Liaison Officers of the FFV, III MAF, and ARVN Corps, at both corps and division levels, were the direct representatives of the 7AF Commander to the ground organizations to which they were attached. Day-to-day direction, however, was received by them from the 7AF DCS/O through the TACC, DOC, and the DASCs.<sup>14/</sup>



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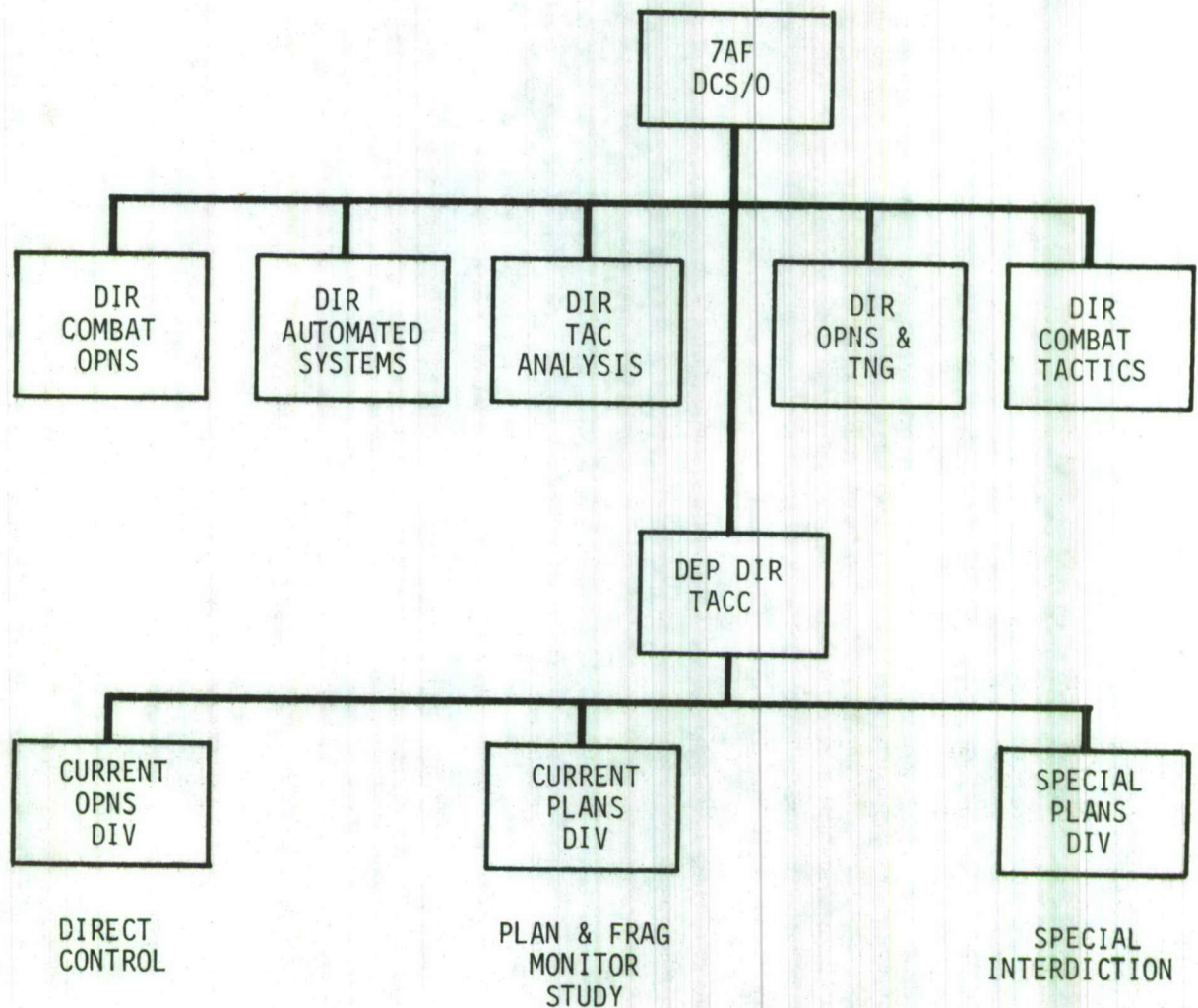


FIGURE 7

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### Director of Combat Operations

Among other functions, DOC had operational control over all elements of the out-country TACS through the ABCCC and the TACC at Udorn, Thailand. DOC established operational requirements regarding aircraft deployment, TACP deployment, communications support, and radar support for out-country operations.  
15/

### Deputy Director of Tactical Air Control Center

Officially, the TACC director was a VNAF colonel and his deputy was an USAF brigadier general. This unusual "supervisory" relationship was maintained for political purposes, and no significant problems had resulted from it. TACC was jointly occupied by USAF/VNAF personnel. The "director" with VNAF personnel, controlled VNAF operations, and "his deputy" with USAF personnel, controlled USAF and other US/FWMAF operations. Proximity facilitated coordination between the two. Requirements for ARVN tactical air support beyond VNAF capability had frequently been supported by USAF forces.  
16/

With respect to the in-country TACS, the TACC deputy director had operational control over all of its elements; established operational requirements for TACS; established requirements for the deployment of TACPs to operating locations; and was responsible to insure that the distribution of FAC aircraft between CTZs would meet operational requirements. Operational control of the in-country TACS by TACC involved the tactical employment of all AC&W and direct air support capabilities of the system.  
17/

The TACC directorate was also responsible for planning, coordinating,



[REDACTED]

controlling, and/or directing all phases of tactical air support for ARVN and US/FWMAF operating in SVN. It also coordinated and controlled in-country operations performed by out-country forces.<sup>18/</sup>

#### Realignment of Functions between TACC and DOC

Until 19 April, TACC was responsible for controlling tactical airstrikes both in SVN and the out-country areas of STEEL TIGER, TIGER HOUND, TALLY HO, and Route Package 1, and the issuance of frag orders for the IGL00 WHITE (formerly MUSCLE SHOALS) operation.<sup>19/</sup> On 19 April, operational control in these areas was shifted to DOC, after which TACC became responsible almost exclusively for the in-country operations. All ARC LIGHT strikes, wherever they occurred, continued to be monitored and coordinated by TACC.<sup>20/</sup>

The ABCCC was also under the operational control of TACC until 19 April, when it was transferred to DOC. As mentioned previously, the ABCCC was not often used in SVN. It was occasionally called in to direct the air portion of a special operation. When that happened, it came under the operational control of and functioned as a direct extension of TACC.<sup>21/</sup> For such purposes, the ABCCC had virtually been given the equivalent authority of TACC, including the power to divert and scramble offensive aircraft.<sup>22/</sup> Transfer of operational control over the ABCCC was motivated by realignment of geographical areas of operational responsibility between TACC and DOC.<sup>23/</sup>

#### Organization and Functions of TACC--15 July 1968

TACC had a manning authorization of 53 officers and 48 airmen (Appendix II).<sup>24/</sup> The deputy director exercised his responsibilities through three



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TACTICAL AIR  
CONTROL CENTER  
DIRECTORATE

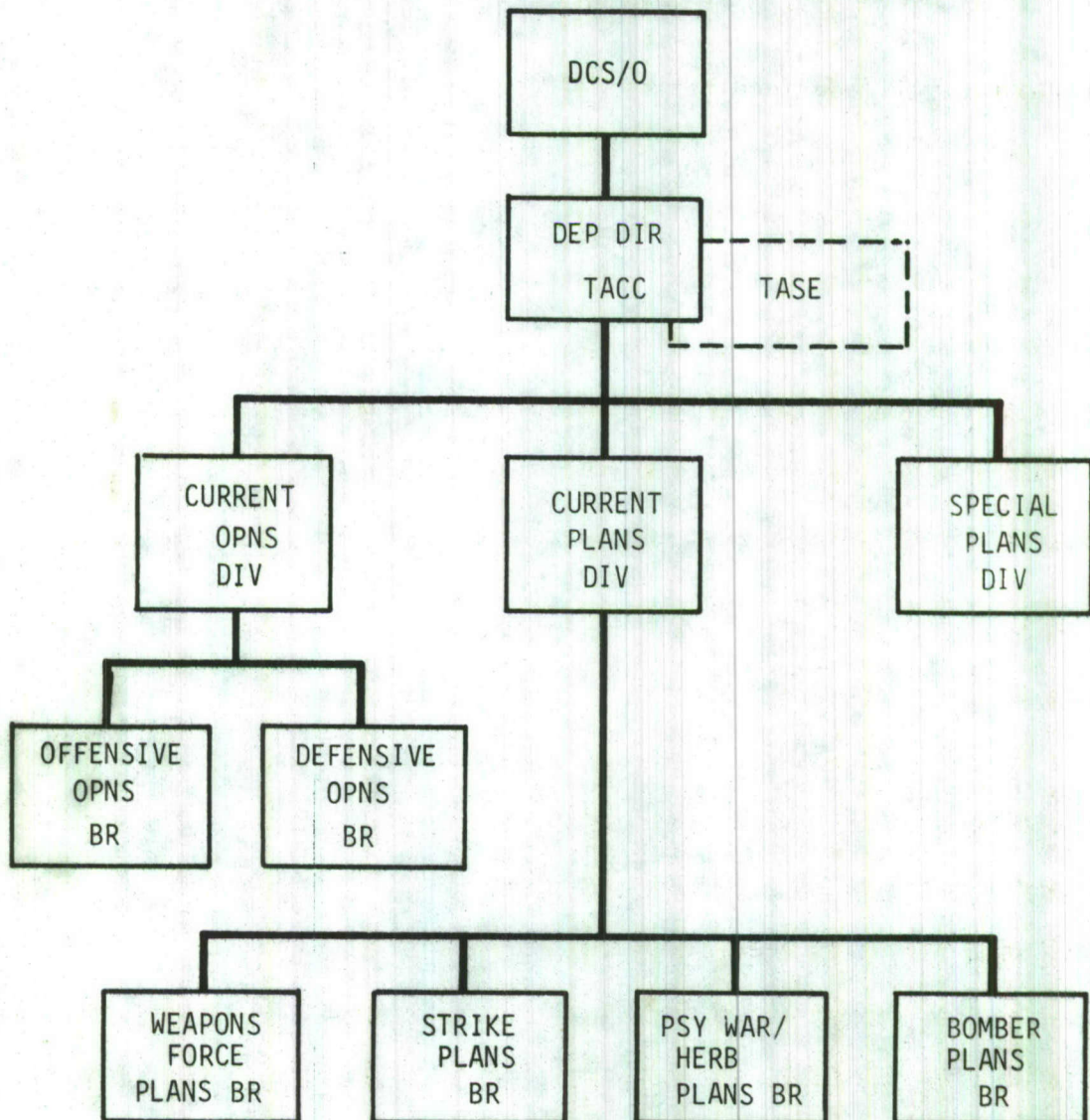


FIGURE 8

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divisions: Current Operations, Current Plans, and Special Plans.<sup>25/</sup>

The Current Operations Division was the nerve center of TACS; its Combat Operations Center directed and controlled daily offensive and defensive operations. The Current Plans Division was responsible for the issuance of frag orders to offensive forces, ("tomorrow's" battles), to herbicide and psychological war air units, and to supporting elements of TACS. It also coordinated B-52 missions, monitored TACS, and coordinated with other agencies on the nature of planned air operations.<sup>26/</sup> The Special Plans Division was concerned exclusively with the IGLOO WHITE (MUSCLE SHOALS) anti-infiltration detection and interdiction system, which employed seismic and acoustic sensors and special munitions specifically developed for the mission.<sup>27/</sup>

#### Current Operations Division

The central function of the Current Operations Division was the management of a COC, an around-the-clock operation concerned almost exclusively with "today's" in-country war. It existed to provide immediate response to the centralized direction and control requirements of the tactical air war being fought at the moment. The division exercised immediate operational control over in-country tactical airstrikes and over air defense operations. It did this daily by controlling operations of the Direct Air Support Center and the Control and Reporting Center structures, their subordinate elements, and the tactical units concerned.<sup>28/</sup>

The division chief executed his responsibilities through an Offensive Operations Branch and a Defensive Operations Branch collocated in the COC.



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This center directed, controlled the execution, and maintained visual presentations of the current tactical air war. It, additionally, monitored all high-interest air movements in RVN and adjacent areas. As a central communications, control, and information focal point, the center alerted, diverted, and scrambled aircraft; it also received and recorded reports of mission results. <sup>29/</sup>

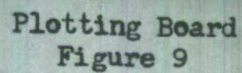
Voluminous statistical data necessary for effective control of the combat situation were reflected on huge maps, vertical plotting boards, and tabular arrangements on the high semicircular interior walls of COC. Among data shown were the four CTZs, grid coordinates, major air bases, airfield capabilities, preplanned missions by type, search and rescue (SAR) operations, near-border SAM sites, weather data, aircraft movement tracks, precise locations of naval units, Hawk missile summaries, alert aircraft, and status of supporting electronic equipment throughout TACS.

The offensive and defensive operations branches coordinated closely with each other on all activities of mutual interest, such as SAR operations, aircraft emergencies, and numerous other operations. <sup>30/</sup> In general, each branch was responsible for the area of activity which its title implied. Both branches, however, were always under the supervision of a senior duty officer, who was responsible to the division chief for the actions of each. Present in, and under the operational control of COC at all times, were representatives of the Deputy Chief of Staff for Intelligence and the Directorate of Weather. They assisted the Combat Operations Center with functions suggested by their organizational affiliation. <sup>31/</sup>

Inter-corps divert and offensive scramble authority (except in I CTZ) was



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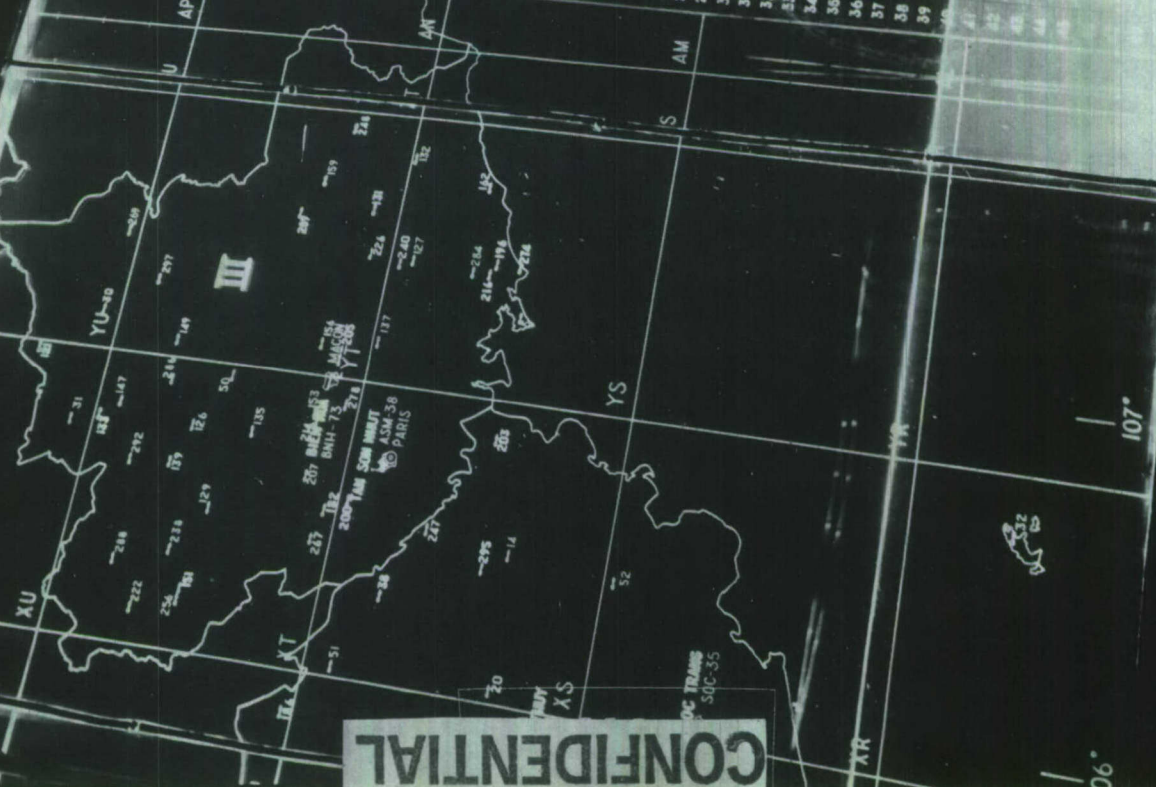


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DAILY		PRE		MIS	
NO.	TYPE	CALL TO TIME	Tot	NO.	TYPE
1	2A	HLB202	0600	51	2F100
2	2F4	DEF11	0610	52	2F100
3	2F4	RCW102	0615	53	2F100
4	2A37	RAP41	0620	54	2F100
5	2A4	HLB204	0625	55	2F100
6	3F100	TOE21	0630	56	2F100
7	2A4	HLB206	0635	57	2F100
8	2F4	SST71	0640	58	2F100
9	1CANS	MLG71	0645	59	2F100
10	2F4	SULLY	0650	60	2F100
11	2A1H	KHART	0655	61	2F100
12	2A1H	BATHN	0700	62	2F100
13	2A1H	CONDN	0705	63	2F100
14	2A1H	PURPLE	0710	64	2F100
15	2A1H	BINSUE	0715	65	2F100
16	2F100	YST41	0720	66	2F100
17	2A4	HLB208	0725	67	2F100
18	2F4	SRT41	0730	68	2F100
19	3F100	SRT21	0735	69	2F100
20	3F100	ZYR1	0740	70	2F100
21	2F4	LUB302	0745	71	2F100
22	3F5	FALCON	0750	72	2F100
23	2A1H	RED	0755	73	2F100
24	2A1H	SPAD21	0800	74	2F100
25	2A1H	GREEN	0805	75	2F100
26	2A4	HLB210	0810	76	2F100
27	2F4	SRT81	0815	77	2F100
28	2F4	SINGR	0820	78	2F100
29	1CANS	MICPST	0825	79	2F100
30	3A1H	BALCAR	0830	80	2F100
31	3F5	FALCON1	0835	81	2F100
32	3F5	FALCON2	0840	82	2F100
33	2F4	PIF41	0845	83	2F100
34	3F100	ICN41	0850	84	2F100
35	2F100	ICE21	0855	85	2F100
36	2F100	YB013	0900	86	2F100
37	2F100	RAP51	0905	87	2F100
38	3F100	DUL31	0910	88	2F100
39	3F100	SOOS7	0915	89	2F100
40	3F100	DSF41	0920	90	2F100
41	3F100	ICN41	0925	91	2F100
42	3F100	YB013	0930	92	2F100
43	3F100	RAP51	0935	93	2F100
44	3F100	DUL31	0940	94	2F100
45	3F100	SOOS7	0945	95	2F100
46	3F100	DSF41	0950	96	2F100
47	3F100	ICN41	0955	97	2F100
48	3F100	YB013	1000	98	2F100
49	3F100	RAP51	1005	99	2F100
50	3F100	DUL31	1010	100	2F100

Tactical Mission Board  
Figure 10



[REDACTED]

retained in COC. In response to requests for immediate airstrikes, COC authorized diverts from fragged missions, notified appropriate DASCs and other control agencies, and recorded the directed action and mission results. <sup>32/</sup>

Statistics for the data board, reflecting strikes allocated and immediate requests for tactical air, were posted at least once every two hours. <sup>33/</sup>

With respect to gun/flaeship operations, COC retained approval authority for scrambles from ground alert, inter-corps diversions, and extensions of crew time beyond that fragged. All airborne resources and fragged missions were controlled by the DASC, except for the last available aircraft on airborne alert, which could be diverted only with COC approval. <sup>34/</sup>

All in-country and out-country ARC LIGHT missions were closely monitored by COC from the time they entered the area, until they left it. COC had all relevant data on planned missions and confirmed the possession of identical data by all supporting agencies that needed it. Altitude reservations made in advance were finally confirmed with the Saigon Air Route Traffic Control Center (ARTCC) soon before TOT. The Combat Operations Center coordinated with CRCs to insure that they had the frag sufficiently in advance, and to insure provision of MIG CAP if required. Approximately 20 minutes before a strike, the center issued a heavy artillery warning to the Saigon ARTCC, VNAF, and all other agencies concerned. This warning was intended to insure clearance of friendly forces from the area. B-52 tracks were plotted at five-minute intervals, and COC continuously coordinated with CRCs and their control and surveillance positions. Records were made on the several aspects of the mission's progress. Higher authority was notified promptly for decisions regarding any



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serious irregularity in ARC LIGHT missions. Each day COC forwarded significant data on mission results to the Bomber Plans Branch, TACC; SAC ADVON, DOC, senior officials in Hq 7AF, COMUSMACV, and CINCPACAF. <sup>35/</sup>

Before any Mobile Search Special (MSQ-77) ground-controlled radar bombing was executed, target coordinates were confirmed through communication with MSQ-77 sites, rather than using FAC direction. If an attempt to resolve any conflicting data was unsuccessful, the senior duty officer had the authority and responsibility to cancel the mission. <sup>36/</sup>

COC frequently supported search and rescue operations, a responsibility which the 3d ARRG exercised through JSARC. COC, among many other agencies, was a frequent requestor of SAR, and transmitted such requests to JSARC. COC immediately directed required escort aircraft and tactical strike fighters to accompany the SAR mission through diversion or scramble. <sup>37/</sup> COC also obtained information on critical aspects of the rescue operations and notified, among others, the 7AF Commander, Vice Commander, Chief of Staff, DCS/O, and DOC. <sup>38/</sup>

COC monitored the electronic equipment status of all radar and MSQ-77 sites, and displayed such data on status boards. Based on current and near-future operational requirements, the COC either granted or denied requests of radar stations for maintenance downtime. COC obtained approval of DOC before granting maintenance downtime in the more northern areas of RVN, and was required to notify the latter of all such changes in any area. Changes in equipment status were then posted on the status board. <sup>39/</sup>



[REDACTED]

The FAC was a major source of visual reconnaissance (VR). About 70 percent of the approximate 10,000 FAC sorties flown each month were in support of the VR program. This intelligence information was reported through TACPs to DASCs who provided TACC a Daily Intelligence Summary (DISUM), including such information as enemy activity, structures, base areas, logistics, infiltration routes, and post-strike bomb damage assessment (BDA). Intelligence personnel in COC received this information, recorded mission results on data tables, and forwarded the DISUM to the Deputy Chief of Staff for Intelligence. He used it to develop targets, determine weapons effectiveness, and degrade targets that had been neutralized or destroyed. <sup>40/</sup>

Data were maintained on runway conditions and other facilities at airfields in SVN through prompt reports from the field on damage from attacks or natural disasters. This information was recorded in COC and reported to senior officials when runway conditions, or any other essential operational facilities were rendered incapable of supporting normal operations. <sup>41/</sup>

COC received reports of downed aircraft which contained classified documents, equipment, weapons, or unexpended ordnance of potential value to the enemy. It determined enemy activity in the area, condition of the wreckage, and the need to destroy. If destruction was recommended, COC notified the deputy director, TACC, who normally obtained destruction approval from the 7AF Commander. If the commander were unavailable, the decision to destroy was made by the senior official within the operational chain of command. The center maintained records of these incidents. <sup>42/</sup>



[REDACTED]

Reports were received and data maintained on the exact location of naval gunfire support ships and hospital ships in the area. This information was conveyed to the CRCs, who in turn passed it on to appropriate CRPs. <sup>43/</sup>

After Intelligence representatives received and processed reports on SAM activity or equipment, they were passed to the Combat Operations Center. It conveyed this information to DOC for the initiation of reconnaissance, electronic countermeasures, or strike suppression, as the situation warranted.

Tactical action by CRCs on unknown tracks was monitored by COC to insure that identification or other follow-up action was taken. COC later tried to determine the cause of each unknown track and conveyed its findings to the local Federal Aviation Agency (FAA) representative who communicated in writing with the parent unit of the violator. <sup>44/</sup>

COC monitored the status of air defense weapons and insured that fighter-interceptor and Hawk missile units maintained the specified alert posture. It also notified all TACS elements of changes in existing air defense alert conditions and insured that these notifications were actually received. <sup>45/</sup>

All in-country aircraft emergencies in progress were monitored by COC, which coordinated, if necessary, with other agencies to acquire needed assistance. COC also provided out-country emergency assistance when the Directorate of Combat Operations requested it. <sup>46/</sup>

COC received, recorded, and forwarded, as necessary, reports of aircraft mishaps such as battle damage and serious noncombat accidents; i.e., JOPREP/JIFFY reports. It conveyed these reports by teletype, voice, or both to



[REDACTED]

predetermined recipients such as the deputy director, TACC; DCS/O, the 7AF Commander, COMUSMACV, and CINCPACAF. COC was initially responsible for insuring that all agencies needing these reports received them.<sup>47/</sup>

The term "short round incident" was used to identify the inaccurate or accidental delivery of ordnance, which resulted in the injury or death of friendly military forces or noncombatants. The center received prompt reports of short round incidents and advised senior officials, and the Weapons Force Planning Branch, which was the TACC staff agency responsible for monitoring investigations.<sup>48/</sup> COC sent short round reports to the 7AF Commander, Vice Commander, DCS/O, TACC Deputy Director, the Director of Information, the Director of Safety, and COMUSMACV.<sup>49/</sup> COC also closely monitored and plotted, at five-minute intervals, all Code 4 or higher VIP flights (lieutenant general, the equivalent, or higher).<sup>50/</sup>

Finally, the COC prepared a daily briefing for the 7AF Commander, summarizing the in-country air operation during the preceding 24 hours. Among other items, this briefing included material, broken down by CTZ, on scheduled sorties and alerts for all USAF and allied air units, plus add-ons, divers, cancellations, aborts, scrambles, and MSQ-77 ground-controlled radar bombing activity.<sup>51/</sup>

In summary, the Current Operations Division was responsible for satisfying the direction, control, recording, and reporting requirements of the in-country tactical air war being fought at the moment. The next portion of this chapter deals with the second major division of TACC--the Current Plans Division--which was mainly concerned with the planning for "tomorrow's" in-country tactical air war.



### Current Plans Division

The second major division of the Tactical Air Control Center, Current Plans Division, was responsible for numerous and varied functions concerned principally with planning for "tomorrow's" in-country tactical air war. (See Fig. 11.)

#### Strike Plans Branch

The Strike Plans Branch was the TACC agency which decided the strike units to be tasked, types of aircraft to be used, and the ordnance to be carried in order to achieve the objectives of the ground commander. Based on requirements and priorities specified by COMUSMACV, and within the limits of available resources, this branch issued a weekly and daily frag to USAF, USMC, and RAAF tactical air units in SVN for the support of RVNAF/US/FWMAF ground forces. It also planned and issued frag orders for supplemental air support such as alert aircraft, MSQ-77 radar bombing, and air cover for cargo drops, defoliation missions, and convoy escort.<sup>52/</sup>

As described in Chapter II, the system of issuing fragmentary orders to satisfy preplanned tactical air requirements of ground commanders was modified by COMUSMACV directive on 30 May 1968.<sup>53/</sup> Before then, frag orders for pre-planned missions were issued on a daily basis only. Since then, the Strike Plans Branch had issued a weekly frag and a daily frag. The new procedure was more simple and secure than the former one.<sup>54/</sup>

Each Friday the Strike Plans Branch received from all strike wings a report on possessed aircraft and recommended flying schedules. To these data, it applied planned sortie rates to determine total capability. USMC and RAAF



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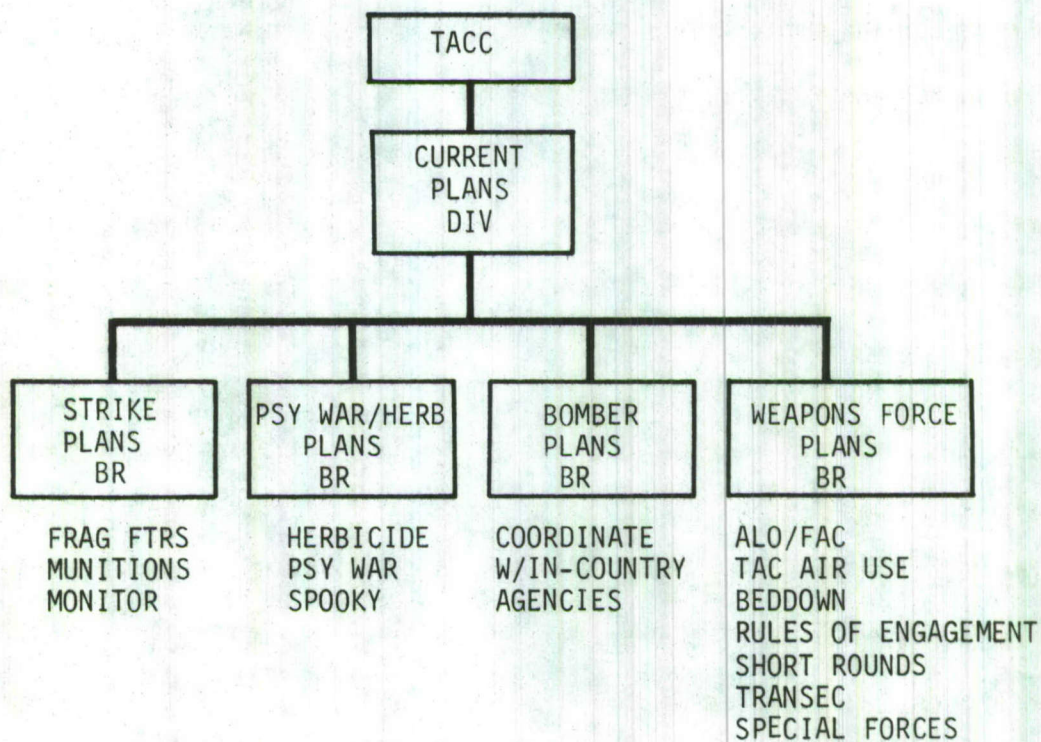


FIGURE 11

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sortie capabilities were being included.<sup>55/</sup> Each Saturday morning COMUSMACV determined the overall level of air effort to be applied by CTZ for the coming week.<sup>56/</sup> The capability required to support prearranged high priority missions was subtracted from the total sortie availability. Approximately 70 percent of the remaining sortie capability was then allocated by MACV to the major ground commanders, after which the Strike Plans Branch issued the implementing weekly frag.<sup>57/</sup> The weekly frag was being issued on Sunday to be effective from 0600H on Tuesday to 0600H the following Tuesday.<sup>58/</sup>

The remaining 30 percent of weekly sortie capability was reserved for the daily frags issued by the Strike Plans Branch,<sup>59/</sup> based again on priorities established by MACV. These daily frags were issued in response to justified requests for additional support.<sup>60/</sup> The requests were received through the system by MACV TASE, and presented to the Strike Plans Branch by approximately 1430H daily. By 1600H, the branch had matched requirements with resources and telephoned a warning order to the DASCs and strike wings. The actual frag order was dispatched from the branch for transmission at approximately 1800H daily. The telephone call thus gave the operational units approximately three and one-half hours of valuable advance notice before they got the frag by teletype.<sup>61/</sup>

Different agencies within DCS/O performed similar or parallel functions for the in-country and out-country air wars. Appendix III reflects the complexity of the fragging process.

The Strike Plans Branch also had current planning responsibility for



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in-country munitions monitoring.<sup>62/</sup> It maintained data on what munitions were available and the type and quantity likely to be needed. It acted to conserve essential munitions in critical supply by instructing expenditure of the most effective substitutes when necessary, conforming insofar as possible to the desires of ground forces commanders.<sup>63/</sup> It managed munitions expenditures against allocations, developed planning figures for inventories, and coordinated requirements with appropriate materiel agencies.<sup>64/</sup>

For special in-country strike operations requiring aerial refueling, the branch issued a request to SAC ADVON for tanker support. SAC ADVON then issued the frag order for the tanker mission if support could be provided.<sup>65/</sup> When SVN-based aircraft performed out-country missions, the branch supplied sortie information to the TIGER HOUND/TALLY HO Division, DOC, who issued frag orders for the missions.<sup>66/</sup>

Other functions of the Strike Plans Branch were the preparation of a daily briefing for senior officials on all aspects of the following day's offensive air efforts<sup>67/</sup> and the provision of information used in weekly COMUSMACV meetings held to determine strike priorities.<sup>68/</sup> It also studied trends from which recommendations were developed for alternate applications of the total RVN-based airstrike forces.<sup>69/</sup> Finally, it was involved daily in the coordination, and sometimes in the fragging of various smaller scale, specialized missions.<sup>70/</sup>

#### Psychological Warfare and Herbicide Plans Branch

The unique missions of defoliation, psychological warfare (psywar), the fixed-wing gunship program, and Project BANISH BEACH were monitored and

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## HERBICIDE OPERATIONS

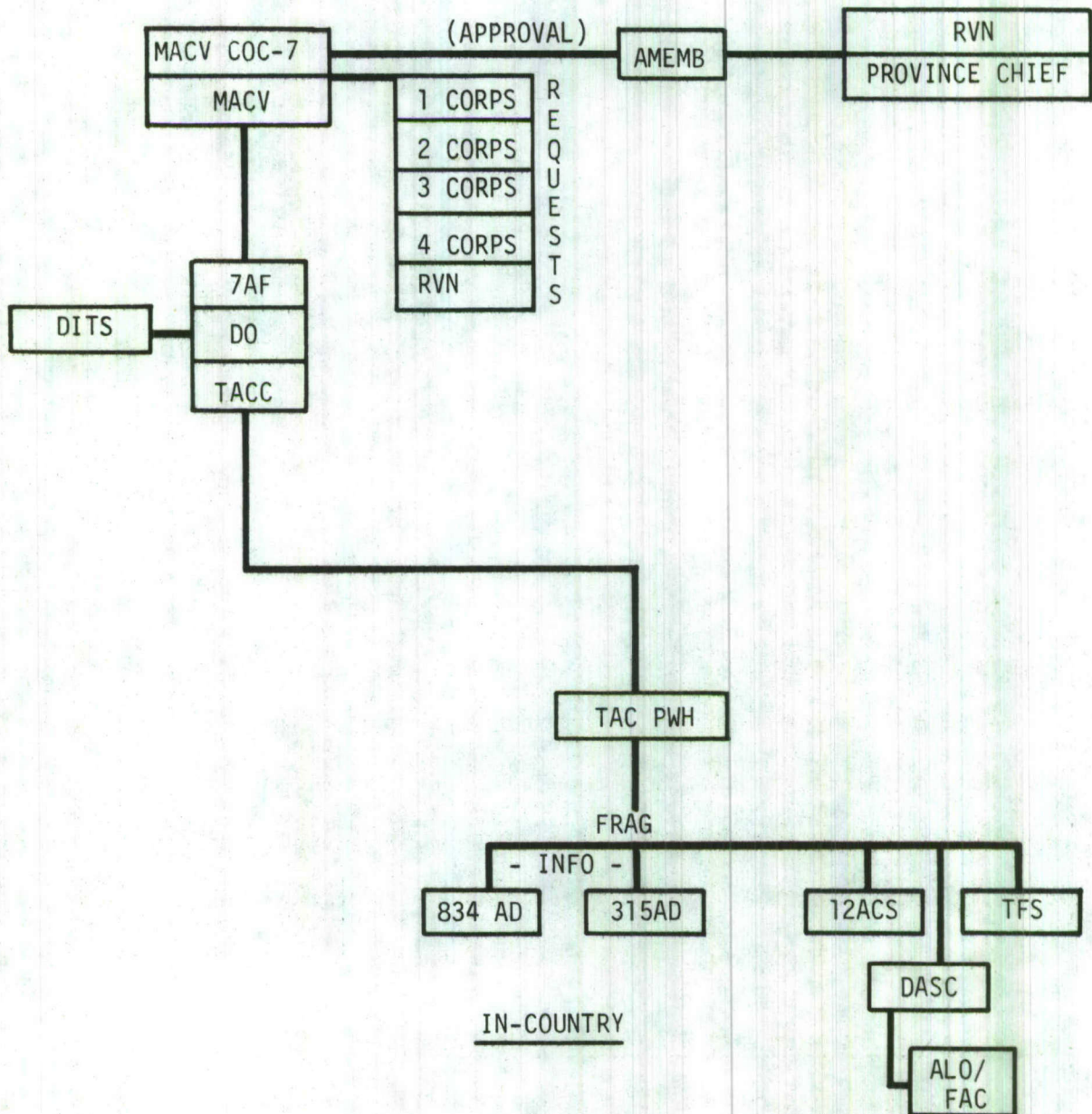


FIGURE 12

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# 7AF PSYOPS MISSION TASKING

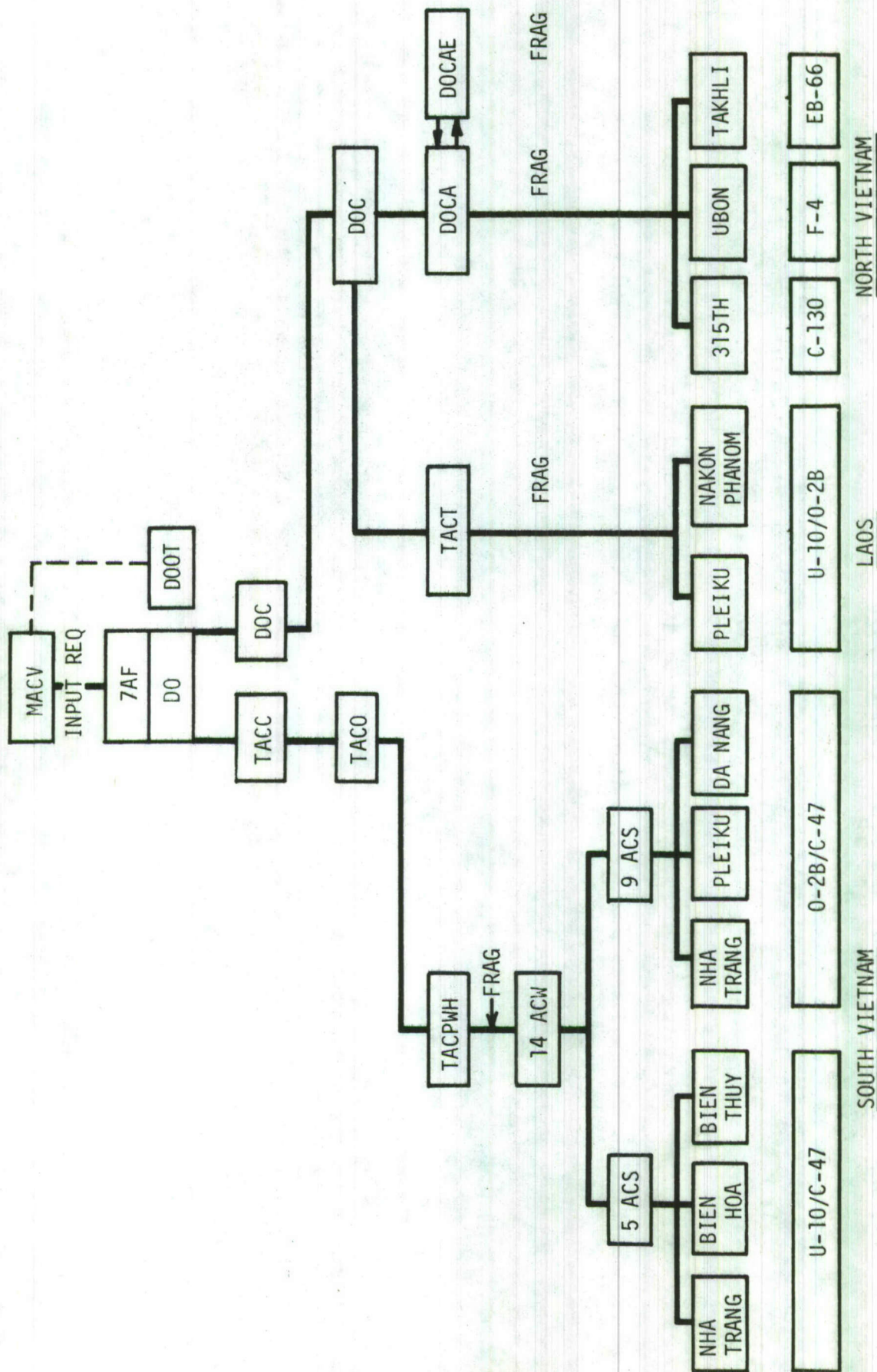


FIGURE 13



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controlled through this branch. (See Fig. 12.)

The Psychological Warfare and Herbicide Plans Branch was the single point of contact within 7AF headquarters for herbicide matters.<sup>71/</sup> Four days prior to defoliation missions, which were directed by COMUSMACV, it transmitted an advance warning notice to the appropriate ground commander. The purpose of these warnings was to obtain clearance for protective fighter aircraft to expend ordnance at the proper time. When it obtained this clearance, the branch issued a frag to all agencies that would be involved in the order's execution.<sup>72/</sup> It also coordinated and arranged for supplemental support; i.e., FAC and fighter, with the Strike Plans Branch.<sup>73/</sup> Finally, the branch monitored and controlled these missions by telephone throughout their execution.<sup>74/</sup>

Weekly, monthly, and quarterly reports on herbicide operations were compiled by this branch and forwarded to the Weapons and Force Plans Branch and the Combat Reports Division, Directorate of Automated Systems, for analysis. These reports contained such data as the number of missions scheduled, number of productive missions, gallons expended, and reason for mission aborts.<sup>75/</sup>

The branch issued a daily frag for the execution of psywar missions requested by U.S. Army psychological operations (psyops) battalions or as directed by COMUSMACV.<sup>76/</sup> It was standard practice to follow each in-country ARC LIGHT strike with a psywar leaflet drop within four hours. Urgent requirements for psywar missions could be satisfied through release of aircraft by the appropriate DASC without the issuance of frag orders. Army psyops battalions could communicate and coordinate directly with USAF psywar squadrons for immediate requests of this nature.<sup>77/</sup> After issuance of the frag, the



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branch was essentially divorced from the remaining activity involved in psywar missions, which then came under the monitorship and control of other TACS elements. Additionally, this branch coordinated with the Tactical Division, Directorate of Operations Training, on all psywar matters that required staff action within DCS/O, Hq 7AF.<sup>78/</sup> The charts on the next two pages reflect the sequence of actions involved in psywar operations. Note that in-country and out-country activities were supervised by TACC and DOC, respectively.

The branch fragged, monitored, and controlled the fixed-wing gunship program (AC-47 "Spooky", and AC-130, later to be augmented with AC-119 and additional AC-130 aircraft). Since these aircraft were committed to air base defense, defense of Special Forces Camps, and the assistance of troops in contact, it was unnecessary to change their frag often.<sup>79/</sup>

A final responsibility of the Psychological Warfare and Herbicide Plans Branch was the operational control of BANISH BEACH, or "burn missions", in which drums of diesel/JP-4 mix were dropped from C-130 aircraft to ignite large ground areas.<sup>80/</sup> These missions were requested by COMUSMACV, directed by 7AF, fragged by the 834th Air Division, controlled by the ALCC, and monitored by the branch from the frag date through completion.<sup>81/</sup>

#### Bomber Plans Branch

The Bomber Plans Branch maintained an around-the-clock operation.<sup>82/</sup> It was the agency within TACC which initially coordinated all B-52 strikes in SEA.<sup>83/</sup> (See Fig. 11.)

Targets were selected from requests received from major ground commanders

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in the four CTZs, 7AF, COMUSMACV, CINCPAC, or JCS, or from various activities within the intelligence community.<sup>84/</sup> Regardless of how targets originated, COMUSMACV either directed the strike or got approval for it from the appropriate authority.<sup>85/</sup> Insofar as 7AF was concerned, COMUSMACV was the approving authority for ARC LIGHT missions. Approved targets were arranged on the basis of priority by COMUSMACV.<sup>86/</sup>

Requests for B-52 strikes were received from COMUSMACV by SAC ADVON, which was the agency preparing and communicating the strike request to the 3d Air Division (3AD).<sup>87/</sup>

Prior to transmission of the strike request to 3AD, SAC ADVON transmitted all pertinent data on the planned strike to the Bomber Plans Branch to expedite the preliminary planning and coordinating activity required of that agency. The branch received this information in the form of a target worksheet containing essential data such as the "target box", grid coordinates, best approach to the target, important intelligence information, and desired supplemental air support from 7AF resources.<sup>88/</sup>

On the basis of these data, the Bomber Plans Branch immediately began the preliminary planning and coordination activities necessary to guarantee adequate supplemental support for the B-52 mission. The branch carefully assessed the SAM and MIG threats through analysis of data on the target worksheet, application of predetermined criteria, and coordination with the Deputy Chief of Staff for Intelligence. Supplemental supporting missions might involve activities such as F-105 SAM suppression, B-66 electronic countermeasures,



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and preliminary reconnaissance. Missions of the latter nature were fragged by DOC agencies outside TACC. Therefore, the branch was required to effect close interdirectorate coordination to guarantee essential support. For example, under the Directorate of Combat Operations, the Attack Fighter Division fragged supporting F-105 missions, and the Reconnaissance/Electronic Warfare Division fragged supporting EB-66 and preliminary reconnaissance missions. In any event, before receiving the frag order for the B-52 mission, which was issued by 3AD, the Bomber Plans Branch determined what 7AF agencies would be involved and notified them accordingly. This advance notification went to MACV TASE and 7AF agencies such as TACC's COC, and to TACC's Strike Plans Branch, if necessary; the Directorate of Operational Intelligence, and the aforementioned agencies of DOC. Advance notification also went to the In-Country Reconnaissance Operations Branch (DOCRI), if reconnaissance of the target area was required after the strike.<sup>89/</sup>

Upon receipt of the 3AD B-52 frag, the Bomber Plans Branch used the data contained in it plus the data contained in the SAC ADVON target worksheet to develop a frag of its own. The branch frag was directive upon the appropriate DASC, CRC, and MSQ-77 sites. It contained the precise data which each would need to execute its portion of B-52 mission support.<sup>90/</sup>

The DASC was tasked to coordinate the air activity with the ground commander. The CRCs of the AC&W system were tasked for necessary radar monitoring, issuance of heavy artillery warnings, clearance of other aircraft from the area, etc. The MSQ-77 sites were tasked for necessary support of ground radar-controlled strikes. Copies of the Bomber Plans Branch frag were

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# ARC LIGHT OPERATIONS

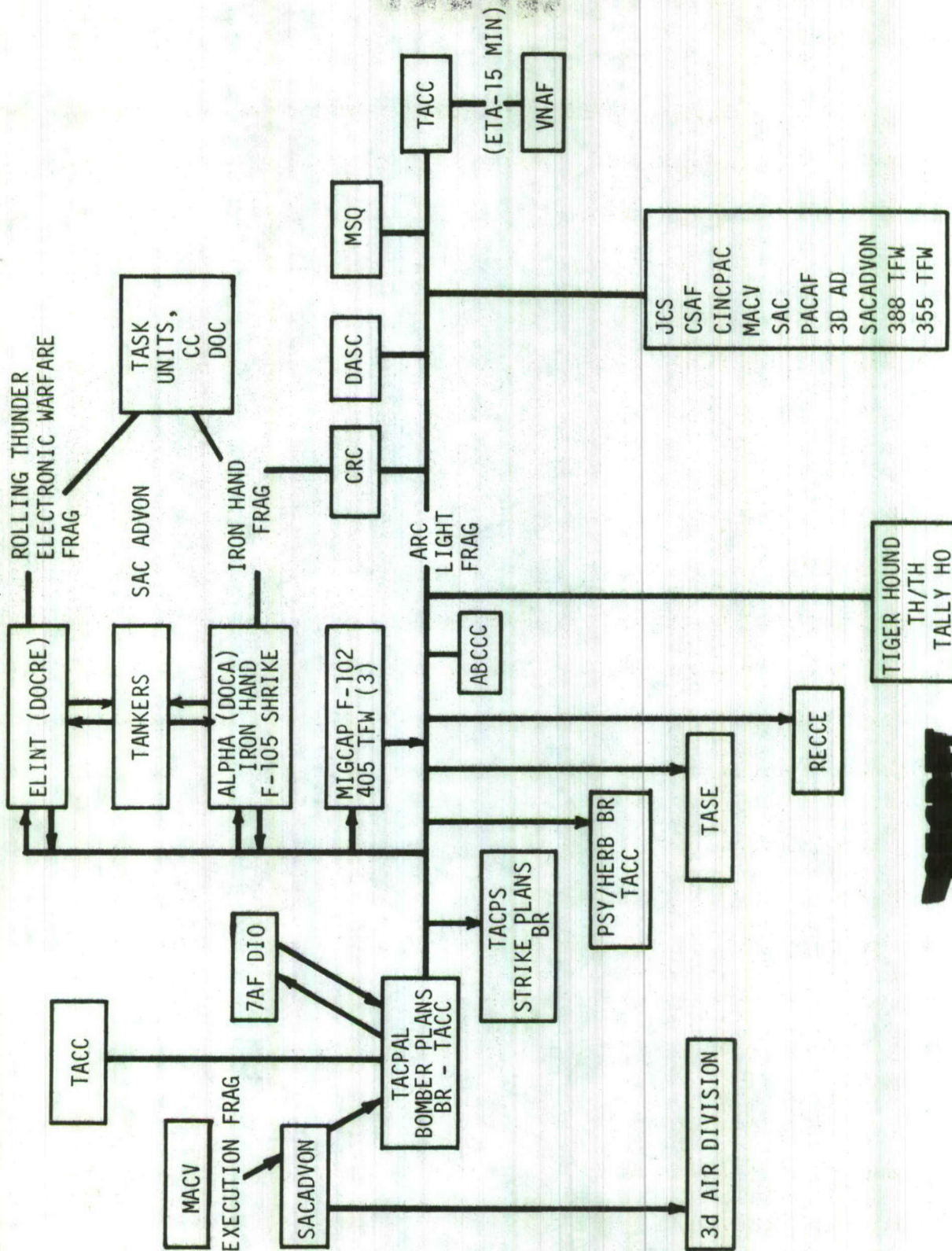


FIGURE 14



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also sent to other selected agencies; i.e., within 7AF Hq, SAC ADVON, and to tactical units which had been tasked for mission support.<sup>91/</sup>

Another function of this branch was the preparation, coordination, and confirmation of in-country altitude reservations for all B-52 missions in SEA.<sup>92/</sup> It did this through advance telephone communications, followed by a written request, with the Saigon ARTCC.

When the B-52 mission reached the designated area it came under the direction and control of the TACC's COC.<sup>93/</sup> If the mission were performed in a high threat area, a member of the Bomber Plans Branch and SAC ADVON was always physically present in COC in a monitoring and advisory capacity to insure that the mission and all supporting elements were performing according to plan. During other missions, a member of the branch was always on duty,<sup>94/</sup> in close proximity to COC, and in telephone contact with COC monitors.

In summary, the Bomber Plans Branch performed strike monitoring during the entire mission to insure that proper command and control procedures were followed and that mission changes were correctly coordinated.<sup>95/</sup> A final function of the Bomber Plans Branch was the post-strike recording and reporting of data such as mission numbers, tonnage dropped, and target coordinates. These data were compiled, provided to selected 7AF offices for analysis, and retained for future historical purposes.<sup>96/</sup> (See Fig. 14.)

#### Weapons and Force Plans Branch

This branch was responsible for a wide variety of planning and staff supervisory activities. It served as the central point of contact within 7AF

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Hq for all staff actions relating to the 504th Tactical Air Support Group,<sup>97/</sup> a unit which provided the equipment, and the DASC and TACP personnel, who worked closely with RVNAF/US/FWMAF at the various command levels.<sup>98/</sup> The branch also completed the staff actions through which the deputy director, TACC, exercised direct operational control over ALO/FAC personnel and aircraft, directed the deployment of FAC aircraft, and apportioned associated personnel throughout the system. It also exercised operational control over Strike Control and Reconnaissance (SCAR) pilots and aircraft. SCAR personnel were not fighter-qualified. They performed FAC functions for out-country operations and the ARVN. In exercising operational control over ALO/FAC/SCAR personnel and aircraft, the branch coordinated with personnel, materiel, and other DCS/O staff agencies.<sup>99/</sup> Additionally, it performed the function of command monitor of FAC facilities and interservice agreements for support of the ALO/FAC system.

A wide variety of special and short-range planning studies were conducted within the branch. It is the command agency responsible for monitoring Special Forces Camp defense and evacuation plans to insure that 7AF will be responsive to emergency situations. The branch made recommendations on the use of different kinds of munitions for special situations and vehicles, or counter-measures against enemy rocket attacks on bases and population centers.<sup>100/</sup> It published the 7AF Munitions Guide for ALOs and FACs. Extensive coordination with other agencies was necessary. Examples are the Tactical Division of the Directorate of Operations and Training; various offices of DOC; the Special Plans Division of TACC; and agencies outside DCS/O, such as the Directorate of Air Munitions under the Deputy Chief of Staff for Materiel.<sup>101/</sup>

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The branch developed operational concepts for the use of new weapons and weapons systems and conducted studies on optimum force deployment.<sup>102/</sup> It provided concepts of operations for Program Action Directives on the introduction of new weapons and equipment.<sup>103/</sup> Here again it was necessary that the effort be fully coordinated with personnel, materiel, manpower, and several other DCS/O agencies which had associated functional interest and responsibility.<sup>104/</sup> Many of these studies culminated in the issuance by the branch of operations plans and orders on the employment and deployment of tactical weapons, weapons systems, and forces within SVN.<sup>105/</sup>

The branch was responsible for reviewing end-of-tour reports submitted by DASC commanders, ALOs, and FACs.<sup>106/</sup> It isolated significant findings to insure that recommendations were considered by the appropriate functional agency within 7AF Headquarters, and that action was initiated by the proper staff activity to correct serious deficiencies reported.<sup>107/</sup>

Investigations of short round incidents were monitored by the branch. It reviewed all reports of investigation, and initiated or recommended actions to eliminate or reduce the likelihood of future incidents.<sup>108/</sup> It also monitored transmission security (TRANSEC) within TACS.<sup>109/</sup> Reports of alleged violations received from USAF Security Service (USAFSS) units, or any agency, were investigated, either through informal inquiry or formal investigation, depending upon the nature of the violation. When an actual weakness in the system was confirmed, the branch was responsible for taking whatever action was necessary to correct the deficiency, including the development of revised procedures, if appropriate.<sup>110/</sup>

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The branch maintained a copy of the "Rules of Engagement for Southeast Asia", which contained restrictions and guidance on the application of air-power. These restrictions had been prescribed by the President, JCS, CINCPAC, COMUSMACV, and DEPCOMUSMACV for Air.<sup>111/</sup> The branch insured that material on in-country rules was made available to all people in SVN who needed it, and that all operational units concerned were informed of changes.<sup>112/</sup> The branch was also the responsible agency within TACC for recommending changes to the in-country rules of engagement; i.e., highly restrictive rules which appeared unduly to inhibit accomplishment of important tactical air missions.<sup>113/</sup> Recommendations concerning such rules imposed at a level higher than 7AF were forwarded to COMUSMACV. Such recommendations were coordinated with the Operations Services Division, which was the DCS/O office of primary responsibility for rules of engagement throughout the theater.<sup>114/</sup>

Finally, this branch was responsible for the preparation and presentation of a weekly "wrap-up" briefing for the 7AF Commander on significant aspects of the in-country air war during the past week.<sup>115/</sup> It also presented recurring orientation briefings on in-country operations, and numerous special briefings as directed.<sup>116/</sup>

#### Special Plans Division

The Special Plans Division was the third major functional element of TACC. It was concerned exclusively with the interdiction mission and specifically with the IGL00 WHITE anti-infiltration system, which employed seismic and acoustic sensors and special munitions specifically designed for this purpose. The original area of the IGL00 WHITE project encompassed a line

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across the western corner of RVN just south of the demilitarized zone and extending westward into central Laos.<sup>117/</sup> It involved sensing devices to detect infiltration movement and antipersonnel and antivehicular munitions to inhibit such movement. Orbiting aircraft received, amplified, and retransmitted signals from these sensors to an infiltration surveillance center which analyzed the signals to produce reliable intelligence data for planning interdiction operations.

Originally most IGL00 WHITE operations were conducted in the areas around Khe Sanh and in the out-country areas of Route Package 1, TALLY HO, and STEEL TIGER. However, because of later shifts in the enemy infiltration pattern IGL00 WHITE operations in the southern portion of I CTZ had increased substantially. IGL00 WHITE missions were being fragged by DOC; none was being fragged by TACC.<sup>118/</sup> Thus, since this division was responsible for both in- and out-country operations, it did not fit neatly, in an organizational and functional sense, within either its supervisory directorate or the one which fragged its missions.



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## CHAPTER IV

### CONCLUSION

As of 15 July 1968, to study the Tactical Air Control Center alone was to study how only a part of the air war in SEA was being controlled and directed. TACC controlled the in-country war; DOC controlled the out-country war. Each of these directorates was organized along geographical, as well as functional lines to control separate wars. Functional duplication under such organization was inevitable. Each directorate had its separate planning function, its separate fragging function, and its separate control function.

The most commonly expressed rationale for this cleavage stemmed from the political necessity for joint USAF/VNAF manning of in-country tactical air control facilities. Because of the political sensitivity and security implications surrounding U.S. combat operations in NVN and Laos, it was not practicable to have VNAF personnel associated with planning, fragging, and controlling out-country missions.

Separate organizations for controlling separate wars fought under different restrictions and rules of engagement also produced complexity and apparent inconsistency. For example, SVN-based strike forces which supported in-country operations were always fragged by TACC; but SVN-based strike forces supporting out-country offensive operations were always fragged by DOC, which also fragged Thai-based aircraft when they supported in-country operations. Thus the Directorate of Combat Operations sometimes fragged forces normally under the control of TACC, but TACC never fragged forces normally under the

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control of DOC.

The 7AF Commander received a briefing every evening on tactical air operations, which had transpired during the day and those planned for the next day. A portion of the briefing, however, was historical in nature. None of the five existing or planned control centers at Tan Son Nhut gave or was planned to give the commander, in a single facility, a comprehensive overview of the total war at any given time. Through the medium of closed-circuit television, the new Command Center or Situation Operations Center could perhaps also provide video displays of tactical airlift and in-country offensive and defensive operations. This would bring together, in one center, a complete air war picture for direction and control purposes.

The 7AF Commander was responsible to CINCPACAF for command of 7AF; for command of the Mainland Southeast Asia Air Defense Region; and for prosecution of the SEA air war beyond SVN and the extended battle area. At the same time, he was responsible to COMUSMACV for prosecution of the air war in SVN and the extended battle area. He had no control over USN aircraft also participating in the Northern war. He coordinated but had no operational control over the employment of B-52s in SEA. His operational control over

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I MAW strike aircraft was somewhat restricted and potentially ephemeral. Complicated by these multifaceted relationships, the Seventh Air Force Commander's role and authority impose rigorous demands on his resources and integrity.

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6. (U) Ibid., p 111.
7. (S) Interview with Col R. Woody.
8. Ibid.
9. (S) Interviews with Lt Col C. E. Blanz, Command and Control Center Br, DOC, 22, 28, 30 Jul 68. Revised Interview, Col Michael J. Quirk, Deputy Director, Combat Operations, 3 Sep 68.
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31. (S) Interview with Col R. Woody.
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34. (U) Rpt, Hq 7AF TACO OI, Nr 55-22, "Operational Control of Gun/Flare-ships", 26 Jan 68.
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- (S) Interview with Col R. Woody.
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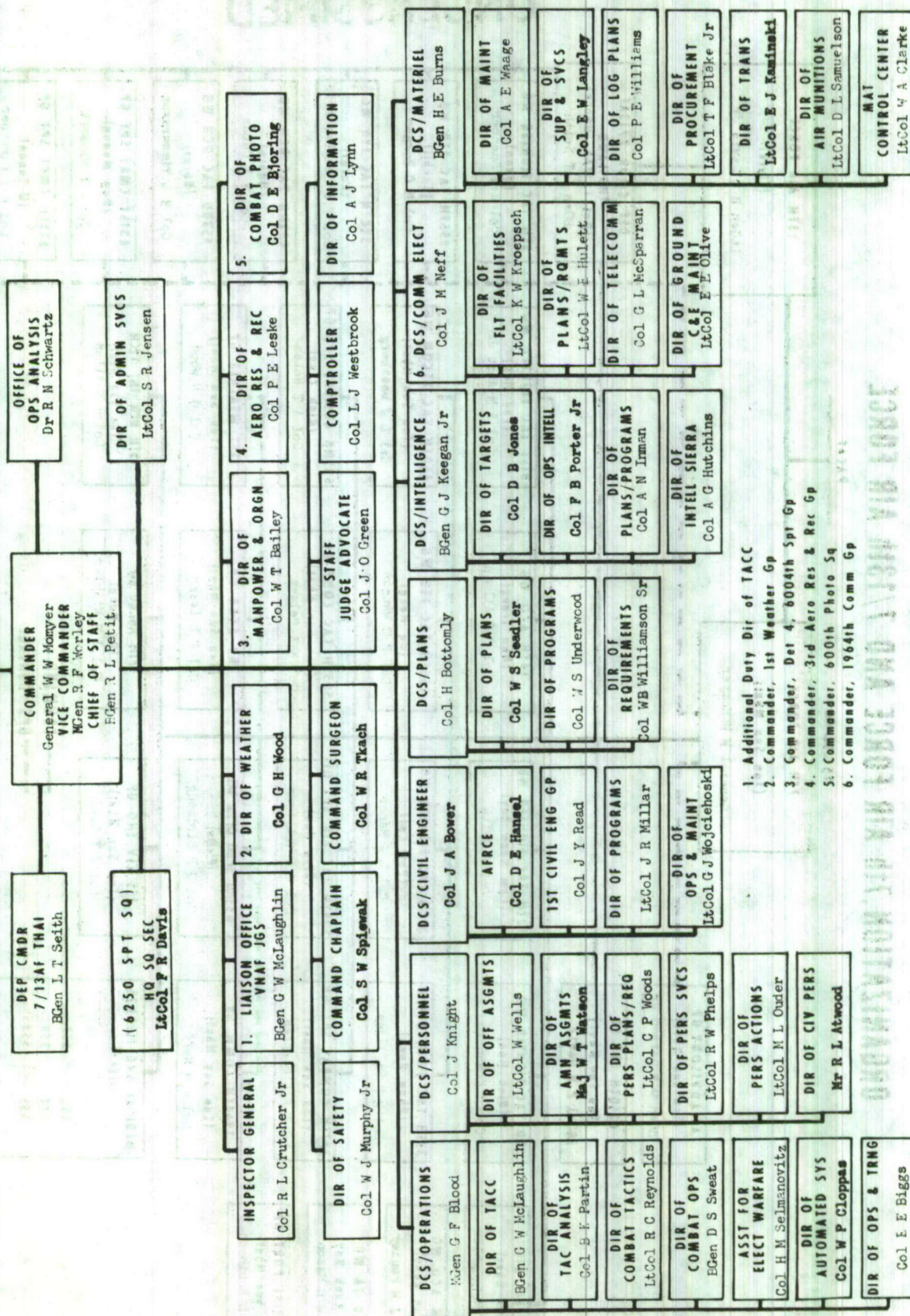
- 107. (S) Interviews with Majs. H. S. Carey and G. H. Terry.
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# ORGANIZATION, HQ SEVENTH AIR FORCE

15 JUL 68  
PACAF



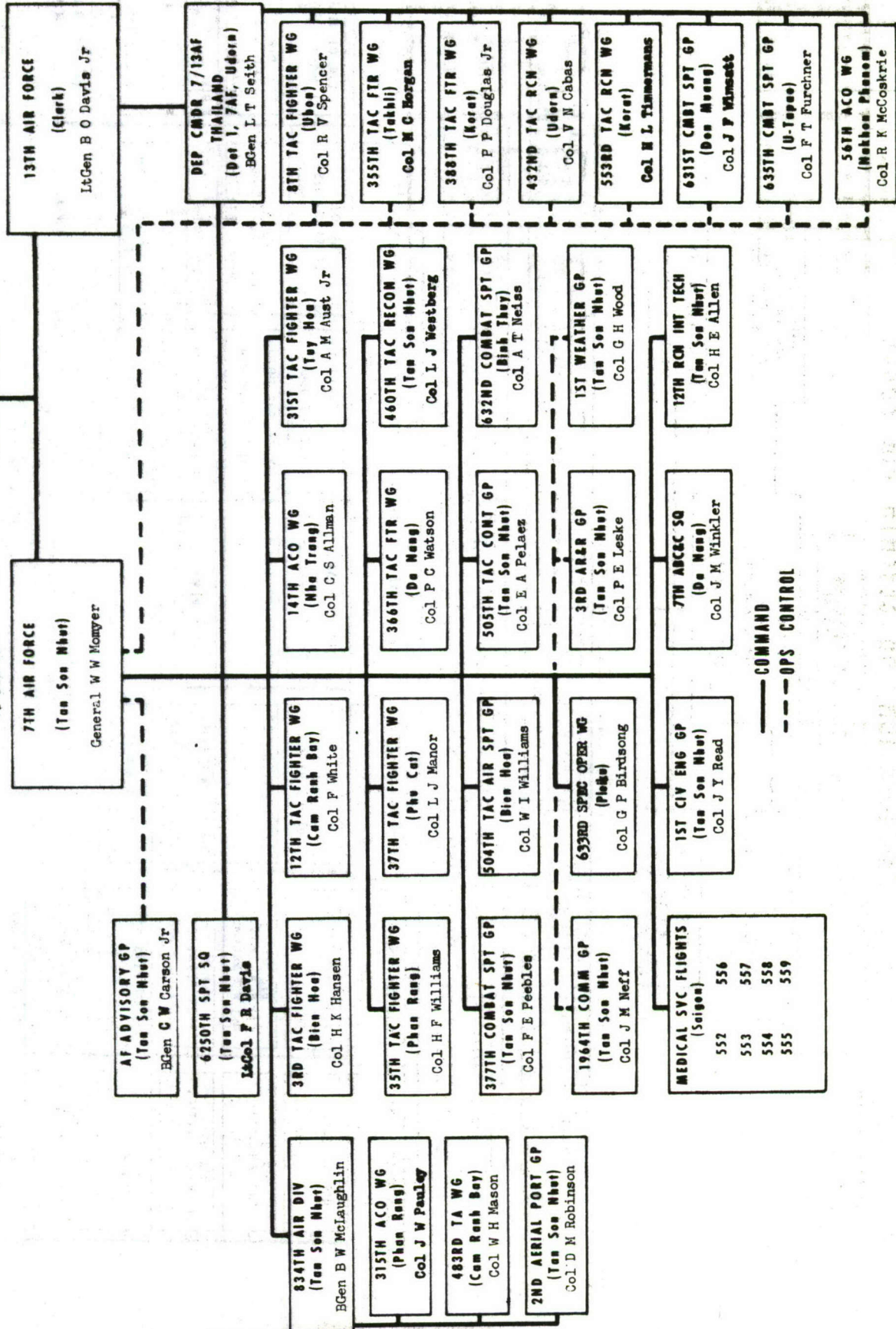
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# ORGANIZATION, 7th AIR FORCE AND 7/13th AIR FORCE

15 JUL 68

PACAF



— COMMAND  
- - - OPS CONTROL

SOURCE: 7-OMO, DP



APPENDIX II

Manpower Authorization

Directorate, Tactical Air Control Center

First Quarter, Fiscal Year 1969

OFFICE SYMBOL	OFFICERS	AIRMEN	CIVILIANS	TOTAL
TACD	4	18	0	22
TACO	1	1	0	2
TACOO	15	10	0	25
TACOD	5	13	0	18
TACP	2	2	0	4
TACWFP	9	2	0	11
TACPS	7	2	0	9
TACPWH	3	0	0	3
TACPAL	7	0	0	7
TACM*	0	0	0	0
TOTALS	53	48	0	101

\* Pending allocation by Hq USAF are 11 officer spaces. These are reflected on the MACV Joint Table of Distribution.



APPENDIX III  
"FRAG" PRODUCTION AGENCIES

AGENCY	TARGETING AREA	FRAG ORDER PRODUCED
DOCA Attack Fighter Div DOC	ROLLING THUNDER BARREL ROLL STEEL TIGER Route Packages 1, 5, 6A	Day Frag (Daily Strike in N. Vietnam) Night Frag (Night Radar Bombing) BR/ST/RP-1 Frag (Laos and NVN); Sup Frags Fact Sheet Frag (Leaflet Drop) Iron Hand Frag (B-52 Support) Giant Dragon Frag (OL 20 Support)
DOCR (Recon)	N. Vietnam Laos	Yankee Team Frag (N. Vietnam)
DOCRE (Elint) Electronic Warfare DOC	N. Vietnam, Laos	1. ROLLING THUNDER Electronic Warfare Frag 2. A. Commando Lance (C-130) B. Combat Apple (RC-135) C. College Eye (AEW, EC-121) 3. Bumble Bug (C-130) 4. Special Purpose (EB-66)
DOCR (Recon) DOC	South Vietnam	Compass Dart/Sentinel Sara Frag DOCRS Reconnaissance Frag (In-Country)
TACPS - Strike Plans Br; TACC	South Vietnam	Weekly Frag Orders Daily Frag Orders--To VNAF/USAF Joint OPORD 456-67 (In-Country Strikes)
TACT-TIGER HOUND/ TALLY HO DOC	North Vietnam, Laos	TIGER HOUND/TALLY HO Daily Frag TIGER HOUND/TALLY HO Supplemental Frag MUSCLE SHOALS Frag
TACPAL - Bomber Plans Br; TACC	North Vietnam, Laos South Vietnam	7AF TACPAL ARC LIGHT Frag
DOSACADYON SAC ADVON	North Vietnam, Laos South Vietnam	SAC ADVON Tanker Frag Strike Request to 3AD



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## GLOSSARY

AAGS	Army Air-Ground System
ABCCC	Airborne Battlefield Command and Control Center
AC&W	Aircraft Control and Warning
AD	Air Division
ADVON	Advance Echelon
ALCC	Airlift Control Center
ALO	Air Liaison Officer
ARLO	Air Reconnaissance Liaison Officer
ARRG	Aerospace Rescue and Recovery Group
ARTCC	Air Route Traffic Control Center
ARVN	Army of Republic of Vietnam
BDA	Bomb Damage Assessment
CC	Command Center
CHECO	Contemporary Historical Evaluation of Combat Operations
CINCPAC	Commander-in-Chief, Pacific
CINCPACAF	Commander-in-Chief, Pacific Air Force
CINCPACFLT	Commander-in-Chief, Pacific Fleet
COC	Combat Operations Center
COMUSMACV	Commander, U.S. Military Assistance Command, Vietnam
CRC	Control and Reporting Center
CRP	Control and Reporting Post
CTF	Carrier Task Force
CTOC	Corps Tactical Operations Center
CTZ	Corps Tactical Zone
DASC	Direct Air Support Center
DCS/O	Deputy Chief of Staff for Operations
DEPCOMUSMACV	Deputy Commander, U.S. Military Assistance Command, Vietnam
DISUM	Daily Intelligence Summary
DMZ	Demilitarized Zone
DOC	Directorate of Combat Operations
DTOC	Division Tactical Operations Center
FAA	Federal Aviation Agency
FAC	Forward Air Controller
FFV	Field Force, Vietnam
FLT	Fleet
Frag	Fragmentary Order
FSCC	Fire Support Coordination Center
FWMAF	Free World Military Assistance Forces
GCI	Ground-controlled Intercept
GLO	Ground Liaison Officer

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Hq	Headquarters
JAGOS	Joint Air-Ground Operations System
JGS	Joint General Staff
JSARC	Joint Search and Rescue Center
KIA	Killed in Action
LZ	Landing Zone
LOC	Line of Communication
MACV	Military Assistance Command, Vietnam
MAF	Marine Amphibious Force
MAW	Marine Air Wing
MDMRF	Mekong Delta Mobile Riverine Force
MIA	Missing in Action
MIG CAP	MIG Combat Air Patrol
NAVLO	Navy Liaison Office
NVN	North Vietnam; North Vietnamese
PCV	Provisional Corps, Vietnam
PHILCAGV	First Philippine Civic Action Group, Vietnam
psyops	Psychological Operations
psywar	Psychological Warfare
RAAF	Royal Australian Air Force
RF/PF	RVN Regional and Popular Forces
ROK	Republic of Korea
RVN	Republic of Vietnam
RVNAF	Republic of Vietnam Air Force
SAC	Strategic Air Command
SACLO	Strategic Air Command Liaison Office
SAR	Search and Rescue
SAM	Surface to Air Missile
SCAR	Strike Control and Reconnaissance (not fighter-qualified)
SEA	Southeast Asia
SEAITACS	Southeast Asia Integrated Tactical Air Control System
SOC	Situation Operations Center
SOG	Studies and Observation Group
SVN	South Vietnam
TACC	Tactical Air Control Center
TACP	Tactical Air Control Party
TACS	Tactical Air Control System
TAOR	Tactical Area of Responsibility
TASE	Tactical Air Support Element
TOC	Tactical Operations Center
TOIP	Time over Initial Point



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TOT	Time over Target
TUOC	Tactical Unit Operations Center
USAF	United States Air Force
USAFSS	United States Air Force Security Service
USMC	United States Marine Corps
USN	United States Navy
VC	Viet Cong
VIP	Very Important Person
VR	Visual Reconnaissance
VNAF	Vietnamese Air Force
WIA	Wounded in Action